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THE LANDSCAPE OF ARTICLE 6 IMPLEMENTATION

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Main authors:
Stephan Hoch, Peris Waweru, Ximena Samaniego Figueroa, Holly Thomas, Bruk Tekie, Axel Michaelowa (Perspectives Climate Group)
Sandra Greiner, Marco Della Maggiore, Lydia Omuko-Jung, Anna Kovács, María José Rodezno Ayestas, Mauriz Schuck (Climate Focus)

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DISCLAIMER

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EXECUTIVE SUMMARY

The Paris Agreement's (PA) long term goal of limiting average global temperate increases to between 1.5° and 2°C targets is ambitious and scientifically robust. Yet, the current mitigation targets put forward by Parties in their nationally determined contributions (NDC) to those crucial PA targets fall woefully short, leading to a massive mitigation gap. The Paris Agreement's Article 6 offers countries a key instrument to enhance their ambition as it enables well-designed carbon markets to deliver additional mitigation action by mobilising both public and private financing, fostering international collaboration and sustainable development, as well as driving innovation in developing economies.

This study reviews the state of play of the global landscape of Article 6 implementation. It represents the fourth edition of a series of studies that have previously analysed the progress made on global Article 6 implementation on a practical level since 2018 and is the first edition that has been prepared since the adoption of the Article 6 rulebook during COP26 in 2021. The study is structured in three parts, beginning with an in-depth examination of the current status of Article 6 rules and implementation, followed by a deep dive on host country frameworks. The third part presents detailed fact sheets on all relevant Article 6 implementation initiatives. All three parts form the basis for concluding analytical take-aways on the current status of global Article 6 implementation, which are presented after this summary. A key insight is that the implementation of practical carbon market activities that meet the new requirements of the Article 6 rulebook is only slowly moving beyond early-stage piloting.

PROGRESS MADE ON INTERNATIONAL RULES SHAPING GLOBAL CARBON MARKETS

Using carbon markets effectively depends on robust rules that ensure environmental and social integrity of the resulting activities. The adoption of Article 6 rules as part of a more comprehensive Paris Agreement rulebook during COP26 in 2021 represents a landmark agreement for international carbon markets even though these remain unfinished and continue to evolve. Our analysis finds that while there is clear progress in elaborating

technical elements of Article 6 rules, further negotiations will continue at least until COP29 in 2024. Ongoing Article 6 negotiations comprise a wide range of complex rules that specify the nuts and bolts of how to participate in carbon markets.

As regards the cooperative approaches under Article 6.2, further clarity is needed on the scope of host country authorisations, the detailed rules for accounting and reporting on Internationally Transferred Mitigation Outcomes (ITMO) transactions by Parties, as well as the features of the international registry. While these issues are essential to ensure proper accounting at the global level, individual cooperative approaches are not dependent on their resolution and can in theory already go ahead. They are, however, contingent upon the adoption of domestic carbon market frameworks by host countries. Our study shows the progress activities aiming for inclusion under Article 6.2 have made despite incomplete rules.

By contrast, the Article 6.4 mechanism, which is widely seen as the successor to the Kyoto Protocol's Clean Development Mechanism (CDM), is dependent on the finalisation of the rules and not yet available for use. The work of the Article 6.4 Supervisory Body (A6.4SB) in fleshing out detailed technical rules for the activity cycle, the mechanism infrastructure and host country requirements are currently in full swing. Even so, the mechanism cannot be expected to start processing requests for new activities before 2024 at the earliest. Yet, the selective transition of CDM activities that meet all Article 6.4 requirements may lead to a jump start of the mechanism in the coming years, successfully transitioned activities could quickly generate several years of carbon credit vintages that may qualify as ITMOs.

KEY FACTS AND FIGURES ON ARTICLE 6 IMPLEMENTATION

While incomplete rulemaking has slowed down implementation, some Article 6 activities have still made significant strides evolving from preparatory and pilot phases into full implementation since the last edition. The report reviews how concrete initiatives have moved from the preparatory phase initiated with bilateral cooperation and methodology development, to the pilot phase, involving the authorisation of transfer, initial ITMO issuance, and MRV activities. Even though available ITMOs still remain at marginal volumes (partially due to a lack of necessary procedures at national levels as well as finalisation of outstanding issues of the Article 6 rulebook), several Article 6 activities have progressed to ITMO generation. For instance, among the 13 initiatives analysed in this report, only two have already provided information regarding the volume of contracted ITMOs. The JCM has reported a total of 0.127 million ITMOs at an average rate of USD 36 per tonne of CO_2e. In contrast, Switzerland's Klik Foundation has disclosed holding a significantly larger volume of 8.7 million ITMOs, priced at USD 23.50 per tonne of CO_2e. We expect to see an increase in ITMOs as countries continue to

develop operational Article 6 frameworks and once the rules on cooperative approaches and the Article 6.4 mechanism have been finalised.

In terms of investments made to date, there have been several commitments already set aside. However, some initiatives are still in their initial stages having recently signed Memoranda of Understanding (MoUs) without clear financial indications. With only approximately USD 1.8 billion earmarked for Article 6 initiatives globally, there is still considerable need for additional investments.

So far, 9 buyer countries and 3 development finance institutions have actively engaged with 59 host nations in the procurement of ITMOs as well as supporting capacity-building initiatives. Only one approach, the Adaptation Benefits Mechanism (ABM) promotes Article 6.8 as a non-market-based approach. Importantly, the updated report confirms previous observations that a majority of Article 6 support initiatives are concentrated in Africa and Asia, indicating a more balanced geographical distribution of the benefits of Article 6 compared to the early days of the CDM. Moreover, various previous seller countries such as Korea, Singapore, and UAE, have transformed into carbon buyers, which represents a tectonic shift for supply and demand dynamics on a global level.

DEEP DIVE: HOST COUNTRY FRAMEWORKS

Article 6 host countries are currently preparing for the translation of the Article 6 rulebook into legally robust participation requirements at the national level. This empirically grounded analysis looks at 51 countries in detail, recognising the breadth and complexity of the Article 6 readiness landscape. The key takeaway from this analysis is that most developing countries have begun establishing operational Article 6 frameworks, institutions, and infrastructures, which are still, however, in a formative stage. Further strengthening host country readiness will be essential for achieving mitigation outcomes at scale, as well as providing benefits to host countries and domestic stakeholders from engaging in Article 6 transactions. Host country readiness is presently a prominent focus area in Article 6 implementation, with an increasing number of emerging capacity building initiatives. Germany and Japan are key partners in both leading capacity building initiatives and supporting programmes aimed at advancing host country readiness. Host countries are also actively taking charge and shaping their regulatory frameworks, pursuing various strategies in close alignment with national circumstances and climate policies. The top priority areas include designing and adopting legislation to engage with carbon markets, capacity building for government stakeholders, and developing national registries. Sub-Saharan Africa is at the forefront of Article 6 readiness efforts, with several countries either having already published their frameworks or being in the process of drafting them.

Albeit most countries analysed here are yet to define their Article 6 strategies. A considerable number have established inter-ministerial task forces and have made progress in defining key institutions and their responsibilities. Ghana and Zimbabwe are frontrunners in this regard, as they have two of the most extensive Article 6 frameworks and institutional arrangements. The handful of host countries that already have frameworks in place predominantly address international carbon markets more generally. These frameworks also include, among others, considerations on VCM activities and varying ways of integrating them into national carbon market strategies. When it comes to regulatory approaches, the VCM and Article 6 instruments (e.g., bilateral crediting mechanisms and the Article 6.4 Mechanism) are effectively regulated by the same accounting and reporting framework provided by Article 6.2. This illustrates that host countries are developing their frameworks with a keen eye on how Article 6 guidance applies to different mechanisms in a holistic manner. Regarding eligibility criteria, host countries have so far used either one or a combination of two approaches: 1) a positive list of eligible activities or sectors for Article 6.2 cooperative approaches, and 2) a negative list for ineligible ones, the former being more common. Certain approaches to eligibility, issuance and authorisation may be applied interchangeably, fostering adaptability and efficiency. For instance, Ghana, Zambia, Thailand, India, Indonesia, and Zimbabwe define specific lists of activities, with Ghana and Indonesia adopting a mixed strategy.

An issue that has recently risen in importance is benefit-sharing related to carbon market activities. Countries face the challenging task of finding a balance between their own interests (mitigating the overselling risk and ensuring fair revenues, among others) and maintaining incentives for investors. The distribution of resources from carbon market transactions is gaining increasing attention, as countries need a framework that allows for a fair distribution of benefits while also addressing their climate priorities. When it comes to working on these issues, East African countries are putting forward various proposals, with Kenya and Tanzania being at the forefront of addressing benefit-sharing arrangements. Further, setting regulations on ITMO pricing, associated fees and how proceeds are allocated is also an area currently in the process of clarification. In a similar vein, despite the growing importance of both Article 6 and REDD+ initiatives, none of the existing frameworks provide detailed guidance on how Article 6 and REDD+ intersect. This points to a need for guidelines that comprehensively address how these two crucial components of climate action work together. Likewise, the transition of CDM activities remains an overlooked area, as national procedures and criteria for approving transition requests have yet to be specified. Addressing this regulatory gap is critical to reduce uncertainty for project participants of eligible activities.

IN CONCLUSION

The unfinished business of crafting international carbon market rules and operationalising new instruments has led to uncertainty among market participants and has delayed the establishment of institutional frameworks in buyer and seller countries. In our analysis, this is a crucial barrier holding back larger scale Article 6 roll-out. As a result, overall progress on implementation remains incremental, prompting questions about when both buyer and seller countries will fully embrace and accelerate Article 6 implementation. Carbon market implementation could be accelerated by completing the establishment of carbon markets rules at both the international and national levels, as this would enhance investment certainty for the private sector. Whether key Parties are willing to increase their overall NDC ambition, with international carbon markets as an instrument to achieve updated targets, is likely to be an additional factor that will determine the outlook for the global landscape of carbon market implementation.

SYNTHESIS AND KEY TAKEAWAYS

The final overarching conclusions presented here draw on rich quantitative and qualitative data describing recent progress on Article 6 implementation and where it may be heading, as well as relevant policy developments described in the study, respectively.

The implementation of Article 6 carbon market activities has been slowly moving beyond piloting. Only few new initiatives have emerged since the last edition, and existing ones have slowly expanded. However, once regulatory clarity improves because of ongoing multilateral and national efforts described in this study, the nascent global carbon market may be able to deliver mitigation outcomes at scale based on the foundations that are currently being established. This anticipated expansion may potentially be rapidly accelerated through a significant future ITMO demand signal resulting from urgently needed increases in global mitigation ambition – a key theme of the first Global Stocktake at COP28 in December 2023.

The unfinished business of crafting international carbon market rules and operationalising the Article 6.4 mechanism is a key limiting factor. A lack of agreement and clarity on how to re-interpret abstract principles such as avoiding double counting and additionality in the era of the Paris Agreement, in which all countries have their own NDC targets, has led to an expansive and complex effort of agreeing on workable rules for practitioners both in government and among market participants. This can be clearly observed in the delays in finalising detailed Article 6 rules at UNFCCC level, as well as establishing domestic frameworks in buyer and seller countries. Relatedly, key VCM actors such as independent crediting standards and integrity initiatives engage in debates on how to align VCM rules and practices with the Paris Agreement rulebook. This complex puzzle with several moving parts has sustained uncertainty among market participants about which carbon market activities are investment-ready, and which credits are appropriate choices for different use cases. This incomplete rule-making process remains a crucial barrier holding back a larger-scale Article 6 roll-out. This raises questions about when both buyer and seller countries will fully embrace and accelerate Article 6 implementation and begin to work more decisively towards larger-scale ITMO transactions.

SYNTHESIS AND KEY TAKEAWAYS

As both Article 6 rules and their translation into national frameworks have progressed slowly, we can observe a transition from the Kyoto Protocol to the Paris Agreement 'in slow motion', even halfway into the first five-year NDC cycle. This has a direct impact on the global carbon market, which also remains in a transition phase that is likely to persist until there is a greater degree of regulatory clarity on both international and national levels.

We observe an increasing number of buyer initiatives from the Global South. It is particularly encouraging that several ITMO buyer initiatives are spearheaded by countries in Asia and the MENA region, which were carbon credit sellers during the Kyoto era. Moreover, the geographical balance of proactive host countries is well-distributed, with a considerable number of African countries emerging as frontrunners, not only in terms of domestic Article 6 frameworks, but also in terms of early-stage activity pipelines. This is crucial for the legitimacy of international carbon markets, and thus a crucial factor for future uptake.

It is encouraging that many developing countries have begun to work on establishing Article 6 participation requirements. These are much more sophisticated than previous CDM procedures, often aiming at full-fledged legislation covering all relevant aspects of the Article 6 rulebook. While host country frameworks and infrastructure remain at formative stage, they need to consider open questions and ongoing negotiations on Article 6 rules, but also newly emerging issues such as benefit-sharing of carbon market revenues.

Countries are taking different approaches to managing the unclear interface between Article 6 and the VCM. The VCM needs to reposition itself towards a new world of NDC targets that are slated to become economy-wide, and at least VCM units authorised by host countries are subject to Article 6.2 guidance on NDC accounting and reporting. At the same time, the voluntary market has remained agile during a time of paralysis of the CDM and while the A6.4M is not yet ready to accept new projects. This has allowed mitigation projects to continue to generate revenues that sustained their operations. Open questions on the future co-existence of Article 6 and the VCM may hopefully also be resolved as part of the efforts to finalise both Article 6 rules as well as domestic carbon market regulations.

Moving forward, carbon market implementation could be rapidly accelerated once improved regulatory clarity would enhance investment certainty for the private sector. Based on the current schedule of UNFCCC negotiations and observed progress on domestic frameworks, these processes will last through 2024 and possibly into 2025. For instance, the selective transition of those CDM activities that meet all new requirements to the Article 6.4 mechanism may jumpstart the new mechanism in 2024 which could inject momentum into the global landscape of Article 6 implementation. Taken together, these different factors may lead to a more dynamic

carbon market implementation at scale in the second half of the current NDC implementation period until 2030.

Whether carbon market implementation at scale materialises, depends not only on supply of host countries but also demand signals from buyers. Whereas the study welcomes newly emerging buyer country initiatives that are described in part 3 of this study, the lack of global mitigation ambition continues to undermine significant ITMO demand from NDCs. Whether larger emitters will be willing to increase their overall NDC ambition and employ international carbon markets as an instrument to achieve more ambitious future NDC targets is yet to be seen. This is a crucial factor that cannot be reliably predicted but will determine the overall outlook for the global landscape of carbon market implementation. What is clear, however, is that supply and demand dynamics in the global carbon market are more fragmented than during the Kyoto Protocol, with a larger number of buyers and sellers active in various market segments. This makes it difficult to forecast clear projections on eventual scale and ambition of Article 6 implementation at a global level. Considering the significant global ambition gap, a faster pace of scaling up carbon market activities would be desirable to help accelerate practical mitigation efforts. On the other hand, experience has shown that well-designed rules are essential for the effectiveness and integrity of carbon markets. Therefore, the ongoing regulatory efforts at both international and national levels may cause short term delays in implementation but are a necessary condition for Article 6-backed carbon markets to enhance global mitigation efforts in the long term.

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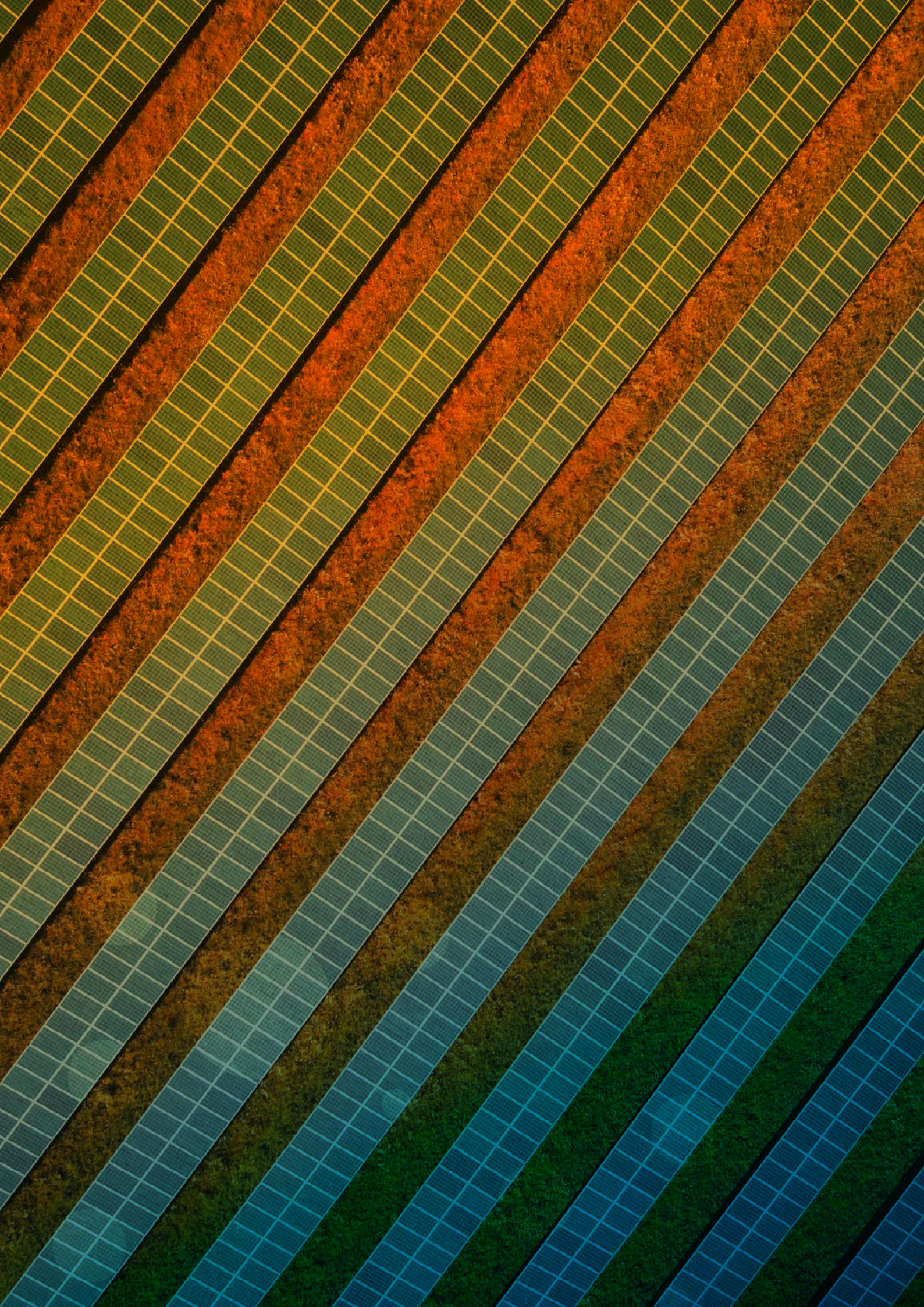

ACRONYMS

A6.4	Article 6.4
A6.4ER	A6.4 Emission Reduction
A6.4M	Article 6.4 Mechanism
A6.4SB	Article 6.4 Supervisory Body
A6IP	Paris Agreement Article 6 Implementation Partnership
AAAP	Africa Adaptation Acceleration Programme
ABM	Adaptation Benefits Mechanism
AC	Air Conditioner
ACS	Africa Climate Summit
ACCU	Australian Carbon Credit Unit
ACMI	Africa Carbon Markets Initiative
ACX	Air Carbon Exchange
AEF	Agreed Electronic Format
AfD	African Development Bank
BAU	Business as Usual
BMU	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMW	German Federal Ministry for Economic Affairs and Climate Action
BMZ	German Federal Ministry for Economic Cooperation and Development
C4PD	Carbon Payments for Development
CA	Corresponding adjustment
CAB	Certified Adaptation Benefit
CAD	Canadian Dollars
CCAP	Center for Clean Air Policy
CCDA	Climate Change and Development Authority
CDM	Clean Development Mechanism
CDM-PA	Clean Development Mechanism Project Activity
CER	Certified Emission Reduction
CFI	Climate Finance Innovators
Ci-Dev	(World Bank) Carbon Initiative for Development
CIX	Climate Impact X
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CMO	Carbon Market Office
CM-TAC	Carbon Market Technical Committee
CO_2e	Carbon Dioxide Equivalent
CooPSA	Cooling Programme for Southern Africa
COP	Conference of Parties
COVID-19	Coronavirus disease 2019
CSR	Corporate Social Responsibility
CTC	Carbon Trade Committee
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DGCCD	General Directorate of Climate Change and Desertification
DNA	Designated National Authority
EC	Executive Committee
ECCC	Environment and Climate Change Canada
EE	Energy efficiency
ERPA	Emission Reductions Payment Agreements

EPA	Environmental Protection Agency
ETA	Energy Transition Accelerator
ETS	Emissions trading schemes
FOEN	Swiss Federal Office for the Environment
GHG	Greenhouse Gas
GEAPP	Global Energy Alliance for People and Planet
GGGI	Global Green Growth Institute
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMH	The Global Methane Hub
GoS	Government of Switzerland
$GtCO_2e$	Gigatonnes of carbon dioxide equivalent
iCRAFT	Energy Transition Project for Uzbekistan
IKI	International Climate Initiative
ITMO	Internationally Traded Mitigation Outcome
IPCC	Intergovernmental Panel on Climate Change
IPCOS	Indo-Pacific Carbon Offset Scheme
JCM	Joint Crediting Mechanism
JETP	Just Energy Transition Partnership
JI	Joint Implementation
JPY	Japanese Yen
KICC	Korea Institute for Climate Change
Klik	Foundation for Climate Protection and Carbon Offset
LT-LED	Long-term low Greenhouse Gas Emission Development Strategy
MAIN	Mitigation Action Idea Note
MADD	Mitigation Activity Design Document
MAIN	Mitigation Activity Idea Notes
MDB	Multilateral Development Bank
MEPS	Minimum Energy Performance Standard
MESTI	Ministry of Environment, Science, Technology, and Innovation
METI	Ministry of Economy, Trade, and Industry
MINAM	Ministry of Environment
MOEJ	Ministry of the Environment, Japan
MoEnv	Ministry of Environment
MONRE	Ministry of Natural Resources and Environment
MOPA	Mitigation Outcome Purchase Agreement
MOTIE	Korean Ministry of Trade, Industry, and Energy
MOU	Memorandum of Understanding
MRV	Monitoring, Reporting, and Verification
$MtCO_2e$	Million tonnes of Carbon Dioxide Equivalent
MWE	Ministry of Water and Environment
NAMA	Nationally Appropriate Mitigation Actions
NbS	Nature-based Solutions
NCCC	Jordan's National Climate Change Committee
NDCs	Nationally Determined Contributions
NGO	Non-governmental Organisation
NICA	Nordic Initiative for Cooperative Approaches
NMA	Non-market Approach

NPI	Nordic Partnership Initiative on Upscaled Mitigation Actions
NTAC	National Technical Advisory Committee
ODA	Official development assistance
OIMP	Other International Mitigation Purposes
OMGE	Overall Mitigation of Global Emissions
ONEP	Office of Natural Resources and Environmental Policy and Planning
PA	Paris Agreement
PIN	Project Idea Note
PNG	Papua New Guinea
PoAs	Programmes of Activities
PV	Photovoltaic
REDD+	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
REMA	Rwanda Environment Management Authority
RMP	Rules, Modalities and Procedures
SADC	South African Development Community
SB	Subsidiary Body
SBSDA	Subsidiary Body for Scientific and Technological Advice
SCF	Standardized Crediting Framework
SDG	Sustainable Development Goal
SEA	Swedish Energy Agency
SEforALL	Sustainable Energy for All
SIDS	Small Island Developing States
SMT	Sustainable Manure Treatment
SPAR6C	Supporting Preparedness for Article 6 Cooperation
TCAF	Transformative Carbon Asset Facility
tCO_2e	Ton of Carbon Dioxide equivalent
TGO	Thailand Greenhouse Gas Management Organisation
TPE	Third-Party Entity
UAE	United Arab Emirates
UICCA	UAE Independent Climate Change Accelerators
UN	United Nations
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNEP CCC	United Nations Environment Programme Copenhagen Climate Centre
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	United States Dollar
VCM	Voluntary Carbon Market
VER	Verified Emission Reduction

PART ONE

STATE OF PLAY OF ARTICLE 6 RULES AND IMPLEMENTATION

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1. INTRODUCTION

Despite the Paris Agreement's pioneering mobilisation of countries in committing to climate change mitigation action, current pledges are falling considerably short of pathways consistent with 1.5/2°C. The latest Intergovernmental Panel on Climate Change's (IPCC) 6th Assessment Report stresses the significant ambition gap between forecast greenhouse gas (GHG) emissions from current Nationally Determined Contributions (NDCs) and limiting warming to between 1.5° and 2°C by the end of the century (IPCC 2023). Well-designed carbon markets can potentially serve as instruments to respond to this urgency to accelerate mitigation ambition and action through mobilising both public and private finance, fostering international cooperation and enabling innovation in developing country economies (UNEP 2022). Carbon markets and taxes yielded record-high revenues, reaching approximately $95 billion total revenue in 2022 (World Bank 2023).

Article 6 of the Paris Agreement allows for international cooperation through carbon markets to support Parties to the United Nations Framework Convention on Climate Change (UNFCCC) in achieving and, critically, enhancing their NDC ambition. Article 6's capacity to generate additional emissions reductions is estimated at 4 to 12 billion tCO_2e by 2030 (Ministry of the Environment, Japan 2022). Thus, while carbon markets can significantly contribute to closing the global mitigation gap, their effectiveness hinges upon clear and stringent rules defined both by the UNFCCC process as well as host countries, to ensure environmental and social integrity.

While the Article 6 rulebook was officially agreed upon at the 26th Conference of Parties (COP26) in 2021, elaboration of the detailed technical rules is still ongoing. UNFCCC negotiations as well as decisions by the Article 6.4 Supervisory Body and the Clean Development Mechanism (CDM) Executive Board continue to further define regulatory aspects of both cooperative approaches under Article 6.2. They also affect voluntary carbon markets as well as the practical operationalisation of A6.4M. However, despite open questions remaining at the level of UNFCCC rules, an increasing number of bilateral cooperation agreements are materialising in response to the high-level finalisation of the A6 rule book. Likewise, multiple host countries have already begun establishing national Article 6 participation requirements, including infrastructure for NDC accounting and reporting, but also processes for activity approval and ITMO authorisation. Except for a few frontrunners, practical implementation of any Article 6 cooperation remains at an early stage and the overall scale of transactions at a global level remains highly limited. This can be explained by a variety of factors, such as remaining open questions regarding UNFCCC rules, that the new multilateral mechanism is not yet operational while the CDM is being mothballed, unfinished national laws of host countries, and limited compliance demand originating from buyer country NDCs.

Hence, the key question remains as to whether and when both buyer and seller countries will be fully ready to accelerate implementation of Article 6 to deliver mitigation action at scale through carbon markets. Moreover, additional factors impact this global landscape of carbon market implementation. In accordance with decisions taken at COP27, the CDM transition period began in mid-2023 and will last until 2025 with the deadline for project transition requests to be made to host countries by the end of 2023. The voluntary carbon market (VCM) is garnering interest and investment, however, its long-term role within the broader backdrop of emerging multi- and bilateral international carbon market instruments remains unclear. There is still only a limited and sometimes contested understanding of the interplay between Article 6 and the VCM. From the perspective of the Article 6. rulebook, Article 6.2 clearly establishes guidance on NDC

accounting, including the use of corresponding adjustments (CAs), as well as reporting to UNFCCC. Similar to the situation in host countries, VCM standards and market participants are still working on aligning their own rules and procedures to the PA rulebook. At the same time, the anticipated integration of VCM and compliance markets can already be observed with the use of VCM units in national carbon pricing systems, but also in government-backed carbon market initiatives, for instance in the energy (Energy Transition Accelerator, ETA) and forest sectors (e.g., LEAF Coalition).

This report is the fourth instalment of a series of studies on the global landscape of Article 6 implementation series. It builds on earlier editions, though it is the first one to be published after the finalisation of the Article 6 rulebook at COP26.

OBJECTIVE AND OUTLINE

The key objective of this study continues to serve as the most comprehensive and up-to-date overview of key facts and figures on practical Article 6 implementation. Building on earlier editions enables this study to deliver analytical insights on progress made on practical Article 6 implementation. As an additional objective, this edition places a special focus on the progress made by host countries in establishing the necessary participation requirements for engaging in Article 6.

The study begins with an overview of the current landscape of UNFCCC rules, highlighting what is agreed and where negotiations continue. This overview does not speak to an audience of expected negotiators, but rather breaks down the relevance of multilateral rules for the practical implementation of Article 6 projects by public and private entities (chapter 2). It then illustrates the Article 6 implementation landscape and introduces a typology of Article 6 cooperation, as well as describes current trends that are emerging before providing relevant facts and figures illuminating the progress of Article 6 implementation internationally. Part 3 presents comprehensive factsheets on the main Article 6 implementation programmes as well as emerging new initiatives developed since the last edition.

Subsequently the report discuss key issues host countries are facing with regards to establishing Article 6 participation requirements, but also other relevant factors that are necessary conditions to accelerate implementation, including capacity-building initiatives, strategy for NDC achievement, governance (including fee and legal structures), infrastructure, VCM regulation, and CDM transition.

2. THE ARTICLE 6 RULEBOOK GUIDES CARBON MARKET IMPLEMENTATION

2.1. CURRENT STATUS OF UNFCCC RULES AND RELEVANCE FOR PRACTICAL IMPLEMENTATION

Carbon markets serve to achieve mitigation targets set out by countries in their NDCs. Article 6 of the Paris Agreement aims to provide a set of multilateral rules for collaboration among countries to trade mitigation outcomes. By working together and utilising carbon markets to support activities generating both emission reductions and removals, countries can achieve their emission reduction targets more effectively. Article 6 creates opportunities for the private sector to engage in technology transfer and sustainable investments. It also provides guidance for the public sector for establishing policy frameworks and financial mechanisms to drive climate action and implement effective climate policies at the national level.

Perhaps the most crucial step change for carbon markets following from the Paris Agreement is that host countries now have their own NDC targets, whereas any mitigation action by developing countries was completely voluntarily during the Kyoto Protocol. This fact explains both the relevance but also the complexity of the Article 6 rulebook which continues to evolve. At the UNFCCC conferences of the parties (COPs), the "Conference of the Parties serving as the meeting of the Parties to the Paris Agreement" (CMA) convenes to take decisions and steer implementation, overseeing Article 6 discussions. COP27, held in November 2022 in Sharm El Sheikh, was the fourth session of the CMA (CMA4). It delivered incremental progress on operationalising technical elements of the Article 6 Rulebook agreed at COP26 (Greiner et. al. 2023). Although reaching agreement on sometimes highly technical and abstract aspects of Article 6 rules has been challenging given the divergent views and concerns among countries, negotiations are continuing constructively, and countries are working towards finding common ground and reaching consensus on how to implement Article 6 effectively. In this spirit, the 58th Sessions of the UNFCCC Subsidiary Bodies (SB) held in Bonn in June 2023, have provided clear mandates to achieve further progress in the elaboration of Article 6 rules during COP28 in December 2023.

The following paragraphs will briefly summarise the current progress on Article 6 rulemaking with a focus on relevance for practical implementation. This brief contextual analysis distinguishes between the two main categories for market-based approaches: Article 6.2 guidance for implementing any type of "cooperative approaches" (incl. compliance markets, but also bilateral cooperation and VCM), and Article 6.4, known as the Article 6.4 Mechanism (A6.4M), overseen by an international Article 6.4 Supervisory Body (A6.4SB); as well as non-market approaches (NMAs), specified in Article 6.8.

ARTICLE 6.2 PROVIDES A FRAMEWORK FOR ACCOUNTING AND REPORTING ON CARBON TRANSACTIONS

Under Article 6.2, two or more countries can generate and trade ITMOs through a potentially broad range of instruments from bilateral cooperation to independent crediting standards that serve the voluntary carbon market. Annex of Decision 2/CMA.3 provides guidance for Article 6.2 and explains relevant concepts, procedures, and obligations for Parties participating in cooperative approaches, including participation requirements Parties must fulfil, rules on accounting for ITMOs through "corresponding adjustments", reporting, reviewing procedures, tracking, ITMOs, and rules on how to raise ambition in mitigation and adaptation action (UNFCCC 2021a). Article

6.2 also provides agreed authorisation qualities for different types and use cases of carbon credits, which includes voluntary carbon market units. Since the adoption of this guidance, which established high-level principles such as the need for corresponding adjustments to prevent double counting, it has not provided specific operational details on how to implement these principles in practice. As a result, Parties have been discussing how to operationalise this guidance in subsequent COPs, with the current negotiations schedule extending until COP29 in 2024 to finish this work programme.

Since NDCs are agreed to become economy-wide over time, and thus comprise all relevant GHG emission sources of a country, any international carbon market transaction needs to be fully accounted for based on A6.2 guidance. Therefore, the Article 6.2 rules for accounting and reporting on international transactions of carbon credits provides an international framework and benchmark, also applicable to international transactions under the VCM. Carbon credits that are not authorised as ITMOs can still contribute to the achievement and enhancement of host country's national targets, while ITMOs can be used to contribute to other countries' targets or, through voluntary cancellation, to global ambition-raising (Ahonen et al. 2023). Therefore, as multilateral rules and national targets expand, Article 6.2 also applies to accounting for VCM transactions which have roles in both supporting national targets and raising ambition by channelling private finance to additional mitigation activities.

ARTICLE 6.4 ESTABLISHES A MULTILATERAL MECHANISM TO SUCCEED THE CDM

The international baseline and crediting mechanism under Article 6.4 (A6.4) aims to contribute to climate change mitigation and support sustainable development like its predecessors (the Kyoto Protocol's Clean Development Mechanism and Joint Implementation (JI)) by registering mitigation activities that would generate A6.4 Emission Reductions (A6.4ERs). The A6.4M's Supervisory Body (A6.4SB) is subject to guidance by the CMA and is responsible for developing the relevant procedures that determine the activity cycle, methodology development and the share of proceeds to support adaptation and cover administrative costs (Michaelowa et al. 2022). While the A6.4SB has taken up a comprehensive set of issues since its establishment in mid-2022, crucial rules and procedures are still under development (see below) and there is no A6.4 activity formally registered to date.

However, this may change quickly as the A6.4M rules enable ongoing CDM activities to request their transition into the A6.4M to the respective host country by no later than 31 December 2023 (UNFCCC 2021b, para 73(a)). The transition must be approved by the A6.4SB and the activity must fulfil all relevant A6.4M requirements (as well as requirements on corresponding adjustments in case of mitigation outcomes authorised under Article 6.2) no later than 31 December 2025 (UNFCCC 2021b, Annex, para 73(b, c)).

Therefore, the CMA4 requested the A6.4SB to facilitate the tasks related to the transition of CDM activities to the Article 6.4M by developing and operationalising a procedure for requesting transition including relevant forms, by no later than June 2023 (UNFCCC 2023b). The Supervisory Body, at its fifth meeting, considered the draft "Standard and procedure for the transition of CDM activities to the Article 6.4 mechanism" and agreed to start the process of receiving requests for the transition from project participants on 30 June 2023 through a website portal. During the sixth meeting, the "Standard and procedure for the transition of CDM activities to the Article 6.4 mechanism" was adopted subject to the discussion of some additional detailed

regulatory elements related to additional provisions for activities that aim to request the transition related to non-permanence risks, social and environmental impacts, and compliance with the applied CDM methodology (UNFCCC 2023c).

Given the large existing CDM portfolio, the selective transition of those CDM activities that meet all Article 6.4 requirements may thus be a powerful fast start for the new multilateral mechanism. The UNFCCC Secretariat provided a first estimate that up to 3000 activities may be eligible for transition considering its active crediting period as at 1 of January of 2021, with a maximum potential of emission reduction around 1400 $MtCO_2e$ (UNFCCC 2023d).

NON-MARKET APPROACHES PROVIDE POLITICAL BALANCE, BUT REMAIN ELUSIVE/UNDER-RESOURCED

The third type of instrument provided by Article 6.8 defines non-market approaches that assist Parties in implementing their NDCs and does not involve the market-based transfer of any mitigation outcomes. Article 6.9 refers to the creation of a framework for NMAs. Decision 4/CMA.3 from COP26 contains a work programme (UNFCCC 2021d, para 2) including activities such as workshops, engagement with stakeholders, submissions, technical papers, and synthesis reports, and aims at collaboration with relevant bodies and processes under or related to the UNFCCC and Paris Agreement (UNFCCC 2021d, Annex, para 7). The work programme identified three focus areas in which such collaboration can happen: adaptation, resilience, and sustainability; mitigation measures; and development of clean energy sources (Michaelowa et al. 2022). Through the work programme specific measures in these areas are to be identified that can provide multiple benefits for participant countries. The development of tools with the support of the UNFCCC Secretariat, such as a web-based platform to record and share information of NMAs is envisaged.

2.2. OUTSTANDING ISSUES IN UNFCCC NEGOTIATIONS AND REGULATORY PROCESSES

Further negotiations and regulatory developments for finalising key elements of the rules for Article 6.2, Article 6.4, and Article 6.8 will be required at least until 2024. Even beyond that, it seems evident that Article 6 rules will continuously evolve based on CMA decisions, as already seen under the Kyoto Mechanisms CDM and JI.

ARTICLE 6.2: SHAPING THE NUTS AND BOLTS FOR COOPERATIVE APPROACHES

At the centre of highly technical and comprehensive negotiations on Article 6.2 is the guidance for accounting and reporting on ITMO transactions. An informal note came out from the last Subsidiary Body for Scientific and Technological Advice (SBSTA) session which summarises the views of Parties on different aspects such as the need for developing countries to receive significant capacity building support to actively contribute to the technical discussions. This includes the development of an agreed electronic format (AEF), a manual to assist Parties in preparing their AEF, clarifications on the technical aspects of interoperability between Article 6 registries, and clear guidance on the content, timing, revisions, and types of authorisations (UNFCCC 2023a).

The agreed draft conclusions from the intersessional negotiations in June 2023 (FCCC/SBSTA/2023/L.6) invite Parties and observer organisations to share their views ahead of COP28.

Technical papers will be prepared by the Secretariat to be discussed during an inter-sessional hybrid workshop that will take place in the second half of the year. Therefore, in the run up to and during COP28, Parties will focus on different outstanding issues shown in Table 1.

Topic	Outstanding issues
Agreed Electronic Format (AEF)	• Test the draft version of the AEF • Elements of authorisation and first transfer can be specified in the AEF • Changes in the authorisation of ITMOs can be incorporated effectively into the AEF • Level of disaggregation of information in the AEF and how should sensitivity of information be handled in the AEF.
Initial report (IR), annual and regular information	• Triggers and sequence of different reporting requirements • Tables for submitting annual information as part of the regular information, • Possible implications for reporting annual information from the application of conversion methods for non-greenhouse gas (GHG) metrics to tCO_2e
Article 6 Technical Expert Review (A6TER)	• Meaning of persistent inconsistencies and exact timing in which the Paris Agreement Implementation and Compliance Committee gets involved in terms of liaising with the Article 6 reviewers. • Modalities for reviewing confidential information to ensure a stringent review process, ideally building on previous experience (e.g., code of conduct for reviewers).
International registry	• Diverging views on the functionality of the registry: transactional or not transactional. • Interoperability between international registry and other registries considering the different nature of their connections. • Introduction of safeguards that both sides (registries to be connected) would like to see introduced (e.g., ensured data access and consistency with underlying registries in case of 'pulling and viewing' registries).
Authorisation	• Content, timing, revisions, and types of authorisations • How much guidance should be provided at international level and what could be left to the discretion of Parties. • Where and how authorisation information is reported.
Corresponding Adjustments	• Will be negotiated during COP29
International registry	• 2030: Electricity production: 23% Emission Reduction) • Reach 42% share of renewable energy in electricity mix

Table 1: Outstanding issues of Article 6.2 negotiations for COP28

This overview shows that while the basic requirements for engaging in Article 6.2 have been defined in the Article 6 rulebook, there is still a comprehensive further need to fully elaborate more detailed rules required for practical implementation during UNFCCC negotiations. Consequently, host countries need to provide own solutions for relevant participation requirements which may need to be adjusted in response to the moving target of evolving multilateral rules over the coming years.

ARTICLE 6.4: LAUNCHING THE NEW MECHANISM

The A6.4SB was tasked with developing recommendations on the application of methodological requirements as well as recommendations for activities involving removals for adoption at COP27. Despite intense discussions during the meetings before COP27 to finalise its recommendations

on methodologies for adoption at COP27, the A6.4SB was unable to agree on operationalisation options. Therefore, the topic was deferred to COP28 (CMA5).

Two main topics are still being discussed by parties that are crucial to effectively operationalise Article 6.4M. The first one is the eligibility of activities involving removals as Parties had raised that there are no agreed science-based definitions of 'emissions avoidance' and 'conservation enhancement.' Besides, the potential of generating emissions reductions with low credibility through emission avoidance activities has been a topic mentioned by different stakeholders and parties. This leaves the door open for these activities not to be eligible under Article 6, showing that like during CDM times, the precise scope of activity types eligible for the A6.4M remains unclear.

Authorisation of A6.4 activities by the host party is the second topic discussed intensively, including timing of providing authorisation, the content of the authorisation statement, and the possibility for revision and/or revocation of it. On the timing of providing authorisation, three options have been suggested with no agreement so far: providing the authorisation as soon as possible, at least prior to issuance; at issuance or at any time based on the national prerogative of host Parties. The choice of option influences the timing of corresponding adjustments. In the run-up to COP28, Parties will focus their work on different outstanding issues shown in Table 2.

Table 2: Outstanding issues of Article 6.4 negotiations for COP28

Topic	Outstanding issues
Eligibility of the activities	• Eligibility of emission avoidance and conservation enhancement activities from Article 6.4.
Methodology requirements	• Encouraging ambition over time and baseline setting approaches. • Alignment with NDC of each participating Party, if applicable and LT-LEDs
Registry	• Interoperability between the Article 6.4 mechanism registry and the Article 6.2 international registry
Host Party Authorisation	• Timing of providing authorisation and its options: providing the authorisation at least prior to issuance; at issuance or at any time based on the national prerogative of host Parties. • the content of the authorisation statement, and the possibility for revision and/or revocation of it.
CDM transition	• Detailed regulatory elements to enable its operationalisation, except for the provisions on the submission of requests for transition, effective on 30 June 2023 that includes: • The request of minimising the risk of non-permanence of GHG emission reductions or net GHG removals over multiple nationally determined contribution (NDC) implementation periods and, where reversals occur, ensure that these are addressed in full (UNFCCC 2023dh). • The assessment of an environmental, social impacts and sustainable development benefits analysis, as well as a monitoring plan of such impacts and planned remedial measures of negative impacts, if any, during the operation of the activity by using the CDM SD tool or whichever is available (UNFCCC 2023dh).

This overview shows that even though the CDM has effectively been discontinued, the new UNFCCC mechanism is still not yet fully operational. However, we can also observe that significant regulatory work is ongoing that may lead to full functionality in 2024. Given existing regulatory

and institutional experience of the UNFCCC Secretariat combined with a potential for a transition of activities from the CDM to the A6.4M, the mechanism may hence potentially produce significant volumes of mitigation outcomes quickly. However, this will strongly depend on the pace of putting in place all required functions by the A6.4SB and UNFCCC Secretariat, for which no exact timeline can be predicted.

3. PROGRESS ON ARTICLE 6 IMPLEMENTATION

3.1. TYPOLOGY OF ARTICLE 6 COOPERATION

As introduced in previous editions of this study, the term "Article 6 pilots" was defined as initiatives that have the potential to align themselves with Article 6.2, Article 6.4, or Article 6.8, once multilateral rules became finalised (Greiner et al. 2019). Since then, the Article 6 rulebook has been finalised first Article 6 pilots have matured, expanded, and progressed into full implementation. To recognise this progress, this edition now consistently refers to "**Article 6 activities**" rather than pilots. Thus, we broadly define an Article 6 activity as a project, programme, or other type of mitigation activity to which the Article 6 rulebook applies. For instance, Article 6 also allows for new activity types such as sectoral or policy crediting, which allows for the quantification and trading of emissions reductions.

Therefore, we update the criteria introduced in the previous version to define an Article 6 activity as:

- A mitigation activity defined as an Article 6 activity by implementing entities
- Governed by the Article 6 rules of the Paris Agreement
- Seeking to test the operationalisation of relevant concepts under Article 6
- Ongoing efforts to enhance capacities and knowledge of countries and stakeholders, while enabling effective implementation of cooperative mechanisms
- Participating countries or entities indicate their intention to eventually transfer or acquire ITMOs or generate results-based units under non-market approaches.

This flexibility in defining activities within Article 6 aligns with UNFCCC rules and allows countries and market participants to explore diverse avenues for achieving their climate change mitigation ambitions and NDC fulfilment. Additionally, implementation of Article 6 activities is intricately linked with evolving UNFCCC rules and regulatory bodies (e.g., the Article 6.4 Supervisory Body) as well as enabling initiatives such as Article 6 capacity building programmes. These components play a pivotal role in shaping the evolution and efficacy of Article 6 initiatives. The Article 6 capacity building programmes provide crucial support and resources to countries, enhancing institutional capacities, technical expertise, and stakeholder engagement. Therefore, this study continues to rely on the conceptual foundation introduced in previous editions to capture the interplay between Article 6 activities and related enabling initiatives which are relevant for implementation.

ARTICLE 6 ACTIVITIES THROUGH A CONCENTRIC RING MODEL

Given the diverse nature of activities that fulfil the above-mentioned criteria, we reiterate here the concentric ring model to distinguish between specific Article 6 activities and associated initiatives, which was introduced in the last study. This model provides a typology for Article 6 in the following manner:

The inner ring consists of tangible Article 6 activities primarily dedicated to executing crediting activities (such as projects, programmes, and others) which aims at generating ITMOs and adaptation benefits. The outer ring characterises diverse associated initiatives under Article 6, primarily focusing on establishing favourable conditions for implementing Article 6 activities, including capacity building and other measures.

The concentric ring model is visualised in Figure 1.

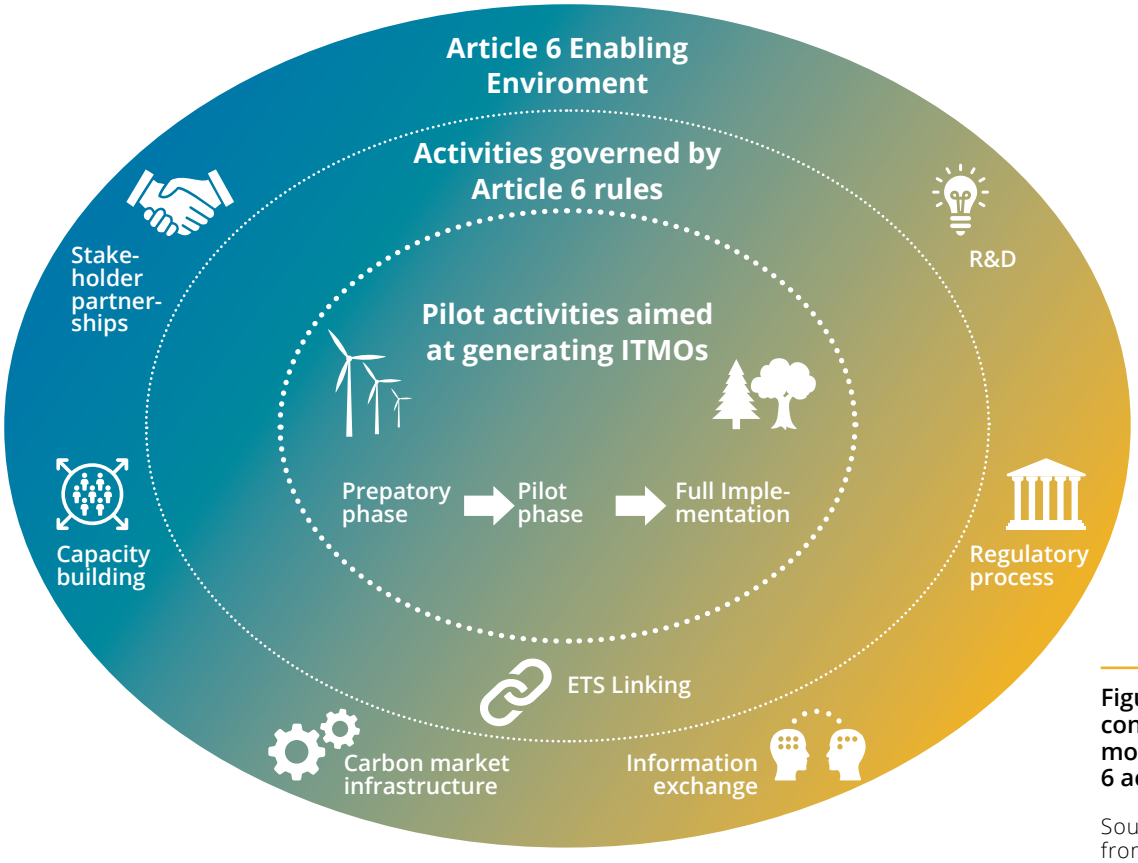


Figure 1: A concentric ring model of Article 6 activities

Source: adapted from Greiner et al. 2020

3.2. SELECTED ARTICLE 6 ACTIVITIES AND INITIATIVES

In this section, we categorise all ongoing Article 6 activities and initiatives based on the concentric ring model. These selected activities are being implemented by governments, regional financial institutions, and multilateral development banks (MDBs). While new Article 6 activities continue to be announced, information on their development might not always be available or might be confidential. Therefore, we do not claim that this list of pilots is exhaustive. The Article 6 Pilot Pipeline database developed by UNEP CCC is updated monthly with recently announced pilots and is a complementary available resource to track the development of new Article 6 activities (UNEP CCC 2023). More details on the various Article 6 activities are presented as detailed factsheets and can be found in Annex 1 of this report.

3.2.1. ARTICLE 6 ACTIVITIES AIMED AT GENERATING ITMOs OR TRANSFERABLE ADAPTATION BENEFITS

Some Article 6 activities have made considerable progress transitioning from the preparatory and pilot stages to full implementation. The preparatory phase began with host country baselines and methodological development, which progressed to the pilot phase upon mitigation outcomes transfer authorisation, issuance of initial ITMOs, and MRV activities. Yet only a limited number of Article 6 activities (within the Joint Crediting Mechanism (JCM), Foundation for Climate Protection and Carbon Offset (Klik) have already fully made this progression, in part owing to an incomplete international and national regulatory framework, but also because of activity-related factors.

The present phase of full implementation encompasses the application of CAs and NDC accounting. This would often start with a bilateral agreement, advancing to the signing of a Mitigation Outcome Purchase Agreement (MOPA) or adaptation benefits offset agreement, and governing of the relationship through to full implementation. Activity developer actions could involve Mitigation Action Idea Note (MAIN) and Feasibility Study in the preparatory phase, investment realisation and Mitigation Activity Design Document (MADD) in the pilot phase, and potential upscaling in full implementation. These dimensions evolve independently, causing phase transitions at varying times. Developer progress may outpace the host country, leading to overlapping phases.

Figure 2 shows the advancement of Article 6 activities and how they unfold through three distinct phases: the preparatory phase, the pilot phase and finally, the full implementation phase, where the activities are executed on a broader scale.

	Preparatory Phase	Pilot Phase	Full Implementation (Phase)
Mitigation activity	• Project Idea Note • Feasibility Study • Development of baseline and other methodological elements	• Investment into mitigation activity • Activity Design Document • Third party validation • Monitoring, reporting and verification	• Same as pilot phase • Potential roll-out
Agreements	• Article 6 tender application • First talks between buyer and seller	• Letter of Intent • Host country certification of ERs	• Mitigation Outcome Purchase Agreement • Host country authorization • Bilateral agreement
Accounting	• Assessment of ERs available for transfer against NDC	• Host country consultations on ITMOs and NDC accounting	• Transfer of ITMOs • Issuance in registry • Corresponding Adjustments • Reporting under Art 6 and 13

Figure 2: The three phases of pilot activities

Source: adapted from Greiner et al. 2020

There is an increasing emphasis on Article 6 activities geared towards the creation of ITMOs. These activities stem from the recognition of the potential of ITMOs as a mechanism for fostering international cooperation in achieving climate goals. ITMOs facilitate the exchange of emission reductions between countries, enabling them to leverage their strengths and collectively advance towards emission reduction targets. This heightened focus reflects a growing understanding of the role that market mechanisms and cross-border collaboration can play in accelerating global climate action. By channelling efforts into the generation of ITMOs through Article

6, countries are positioning themselves to not only enhance their own mitigation efforts, indicated in their NDCs, but also contribute to a more collective and effective response to meeting the targets of the Paris Agreement. It is crucial to recognise that despite the progress made on rules and actions, actual ITMOS remain elusive, with almost no units meeting all formal requirements yet. However, in addition to bilateral activities, many VCM and transitioned CDM activities will generate ITMOs potentially as of 2024 once host countries have established the required approval procedures (see ch.4). Especially once the A6.4 mechanism is fully operational, there may be a move towards 'unilateral' activities promoted and approved by host countries, as has been observed in the early years of the CDM.

Currently, the global range of Article 6 initiatives that are actively being developed and implemented have not expanded significantly compared to the last edition, with only few buyer countries setting up new initiatives, notably Australia and UAE. Additionally, several other existing initiatives have been expanded (e.g., JCM, Klik) by forging cooperation with additional host countries, or by adding new activities to their pipeline. These initiatives are briefly summarised below, with full fact sheets provided in annex 1.

AFRICAN DEVELOPMENT BANK – ADAPTATION BENEFITS MECHANISM (ABM)

The Adaptation Benefits Mechanism (ABM) is a non-market approach under Article 6.8 that takes the form of a results-based finance mechanism currently in its pilot phase lasting until 2025. Upon reviewing adaptation efforts are additional and in line with country NDCs, the ABM issues Certified Adaptation Benefits assets, which aim at aiding developing countries with the financing of their adaptation goals set out in their NDCs.

AUSTRALIA – INDO-PACIFIC CARBON OFFSET SCHEME (IPCOS)

At COP 26, Australia drafted principles for its IPCOS aimed at developing bilateral partnerships between Australia and Indo-Pacific countries for carbon offsetting projects to serve both countries' NDCs. The programme is set to run for 10 years until 2031 with Australia financing projects in host countries, and currently has bilateral agreements signed with Papua New Guinea (PNG) and Fiji. Development of the scheme has been stalled by PNG's re-writing of its Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD+) regulatory framework from early 2022 to August 2023, incurring a halt on all international carbon market projects in the country. The project is beginning its early phases of capacity building in host countries.

CANADA – LATIN AMERICA PROGRAMME TO REDUCE EMISSIONS IN THE WASTE SECTOR

Building on the success of Canada's agreement with Chile 'Programa Reciclo Orgánicos' (Organic Recycling Programme) (2017-2022), the methane mitigation scheme has since expanded to an ever-growing list of Latin America countries. Recycle Organics Latin America and the Caribbean was set up in 2022 and now works in 12 member countries in the region. Through continued financial and technical support from Canada, beneficiary countries pilot cooperative waste management projects to reduce methane emissions under Article 6.

GERMAN FEDERAL MINISTRY FOR ECONOMIC AFFAIRS AND CLIMATE ACTION (BMWK) - INTERNATIONAL CLIMATE INITIATIVE FUNDING FOR ARTICLE 6

CAPACITY BUILDING AND IMPLEMENTATION

In recent years, the German Federal Ministry for Economic Affairs and Climate Action (BMWK) has demonstrated commitment to progressing capacity building and project implementation under Article 6 through various funding programmes. Its International Climate Initiative (IKI) provides thematic funding to countries/organisations through bi- and multi-lateral partnerships, including development of policy frameworks, technical solutions, project implementation, cooperative approach blueprints etc. BMWK's funded initiatives cover a broad range of activities from sustainable cooling to regulatory registry assistance, although there is no eventual intention of generating credits from funded activities that Germany could purchase for compliance purposes.

JAPAN – JOINT CREDITING MECHANISM (JCM)

Japan's Joint Crediting Mechanism fostering partnerships for cooperation on mitigation in developing sectors since 2010 is the most mature and longstanding bilateral crediting mechanism. The JCM continues to expand in member numbers, totalling 27 countries as of July 2023. Since the last edition of this guidebook, the number of projects registered has also increased from 64 to 81 activities.

NEFCO – NORDIC ARTICLE 6 COOPERATION AND CAPACITY BUILDING

Through its Nordic Initiative for Cooperative Approaches (NICA) launched in 2018, the Nordic Environment Finance Corporation is equipping Nordic stakeholders with the skills and expertise to best interpret the Article 6 rulebook at an international and regional level. A general NICA framework for Nordic cooperation under Article 6 has been developed to streamline the region's efforts and maintain its position as a frontrunner in the field of carbon markets. Initial assessments of the readiness of representative African countries have been conducted to gauge the state of current hurdles and opportunities for Article 6 implementation.

SINGAPORE – CARBON TRADING HUB

Singapore has more recently taken a progressive approach to carbon offsetting by accepting all types of VCM credits for domestic offsetting purposes. Furthermore, the country is actively exploring the utilisation of VCM registries to generate ITMOs. This commitment to inclusivity in carbon credit acceptance and leveraging VCM registries reflects Singapore's dedication to both domestic and international climate action initiatives. Additionally, Singapore has established its own carbon trading platform, Climate Impact X, and is shaping itself to be a leader in the field of carbon exchange. Signing trustworthy carbon credit standards also forms part of its strategy to restore trust in carbon markets.

SOUTH KOREA – WASTE SECTOR PROJECTS

Once one of the largest beneficiaries of the CDM, Korea is gaining momentum with number of MoUs signed with countries for cooperative action under Article 6. South Korea has been offering subsidies for private Article 6 project developers in several rounds. In August 2023, the large project developer, Ecoeye, was commissioned by the government to establish various Article 6 projects abroad including recycling, composting, biomass, cookstove and landfill gas, signalling a significant, tangible step to generating emissions abatement.

SWEDISH ENERGY AGENCY (SEA) – ARTICLE 6 ACTIVITIES

Working on behalf of the Swedish government, the Swedish Energy Agency is tasked with procuring ITMOs internationally while contributing to raising global mitigation ambition. The organisation tested virtual pilot projects internationally to assess aspects for successful Article 6 project implementation and received submissions for potential mitigation projects, which it is in the process of reviewing to endorse a selection of these. The SEA has recently also signed bilateral cooperation agreements under Article 6.2 with the Dominican Republic, Ghana, and Nepal.

SWITZERLAND – ITMO PURCHASE PROGRAMME OF THE KLIK FOUNDATION

The Klik Foundation for Climate Protection and Carbon Offset (Stiftung Klima Schutz und CO_2-Kompensation) was founded by the Swiss Petroleum Association to fulfil the legal duty to offset a portion of motor fuel sales, as stipulated in Swiss CO_2 law. Klik handles international agreements on carbon credit generation through development to implementation of climate projects, resulting in the purchase of t ITMOs. The Klik Foundation has already chosen 18 activities across 9 countries (please see Switzerland Factsheet annexed in this study). Switzerland's updated NDC reveals a demand for an additional 13 million ITMOs, totalling 35 million, compared to the initial commitment to purchase a minimum of 22 million ITMOs.

UAE

Hosting COP28 in late 2023, the UAE has also been emerging as a carbon market player. Various project developers have been set up to scout for projects, particularly in the forestry sector. So far, the UAE has signed MoUs to collaborate under Article 6 with Laos, Tanzania, Zambia, and Zimbabwe.

3.2.2. ACTIVITIES GOVERNED BY ARTICLE 6 RULES

Initiatives that will adhere to Article 6 regulations but were not originally designed with the explicit purpose of operating under Article 6 guidelines are situated in the intermediate circle of the concentric ring model. An example of such an initiative falling within this intermediate circle is:

GLOBAL - LINKING EMISSIONS TRADING SCHEMES

Cap and trade systems have been introduced in a growing number of countries. Some of the systems have been linked, e.g., Switzerland and the European Union, and California and Quebec. Transboundary linkages will naturally become Article 6 activities (Greiner et al. 2020). However, there was no considerable progress on linking major emissions trading system in recent years, as countries and regions focused on strengthening and expanding existing instruments. Emissions trading schemes (ETS) linking is likely to become more relevant once these mature further, which is likely to fall into the post-2030 period. However, enabling ETS linking has been a key objective for the accounting and reporting guidance provided in the Article 6.2 guidance for some Parties.

3.3. FACTS AND FIGURES

In this section, we provide analytical insights on the Article 6 landscape of initiatives originating from both the innermost and middle circles. This encompasses their geographical location, inception timeframe, the nature and extent of their collaborations, the chosen paths within Article 6, the allocated financial resources, and the sectors they focus on. The data is taken from the fact sheets in Annex I and has been aggregated and broken down to illustrate key take-aways on the recent progress of Article 6 implementation.

MAPPING ARTICLE 6 ACTIVITIES

To depict the Article 6 activities and associated efforts mentioned in this context, figure 3 illustrates the diverse range of host nations and international organisations supporting these initiatives, along with the geographical locations of their activities. What clearly emerges is a well-balanced geographical distribution that sees strong participation of African countries and other geographies that struggled to historically access the CDM. While the map represents activities and not ITMO volumes or investments, this insight remains indicative at this stage. Yet, equitable geographical distribution of the benefits of Article 6 is a key factor in the overall legitimacy of Article 6-backed carbon markets, hence, this is an encouraging finding. It is important to note that an increasing number of Article 6 buyers, primarily high-income Asian countries, had previously been categorised as developing countries in the Kyoto era (e.g., Singapore, South Korea, UAE). This development, in combination with expanding domestic carbon pricing instruments, has the potential to significantly influence global supply and demand dynamics.

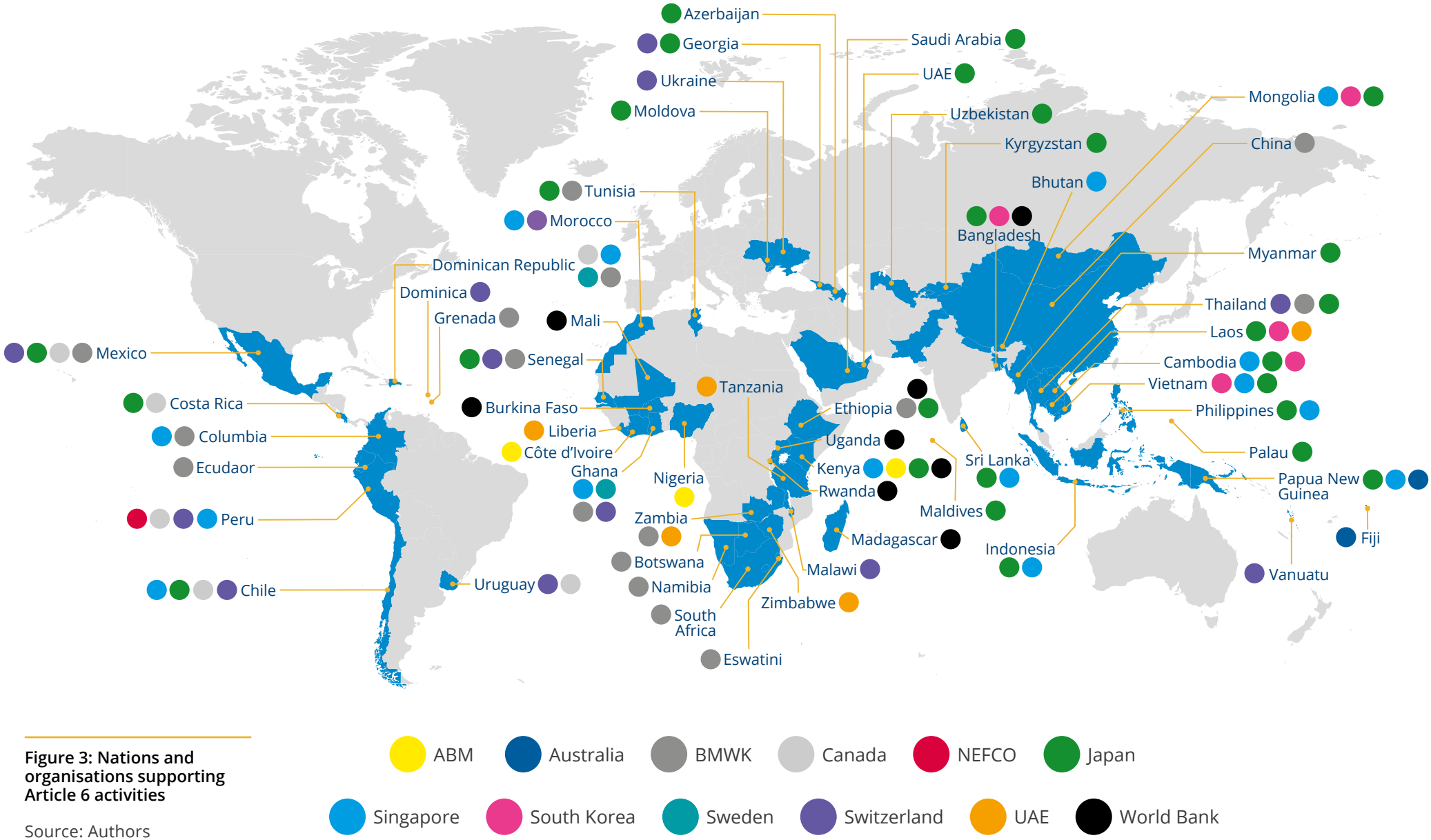


Figure 3: Nations and organisations supporting Article 6 activities

Source: Authors

EMERGENCE OF ARTICLE 6 PILOTS, AND PROGRESS MADE ON MOVING TOWARDS FULL IMPLEMENTATION

The observed Article 6 activities have arisen at various points in the preceding years. Certain initiatives were established before the PA but operate under frameworks adaptable for collaboration within Article 6. Conversely, more recent endeavours have been created with a distinct aim of being acknowledged as Article 6 cooperative approaches. Figure 4 represents the emergence of the Article 6 activities highlighted in this report.

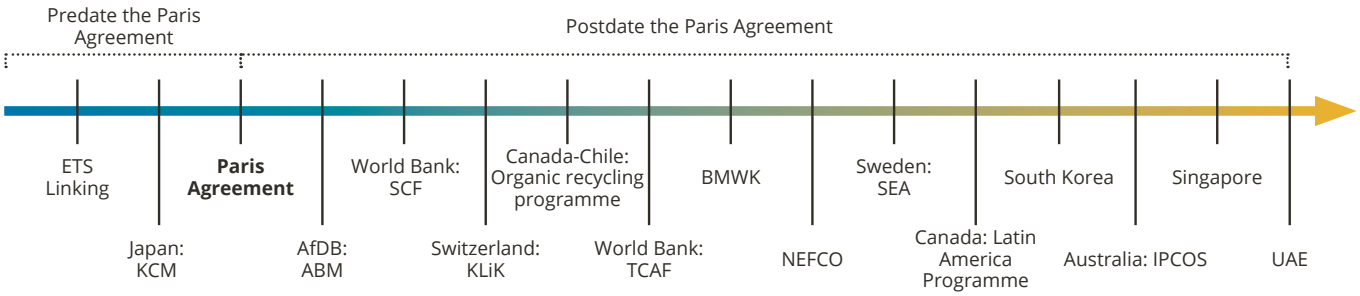


Figure 4: Timeline of Article 6 activities and initiatives

Source: Authors

As of August 2023, many of the pilot activities highlighted in the previous edition have successfully transitioned to full implementation, marking a notable achievement. However, it is important to note that certain pilots have faced challenges hindering their progress. Issues such as unanswered questions in multilateral rules and unfinished host country efforts in terms of establishing participation requirements (all of which have happened against the disruptive backdrop of the COVID-19 pandemic) have contributed to delays or impediments for some initiatives. However, amidst these challenges, the landscape has evolved further with the new market entrants, including those from countries that had been primarily carbon credit sellers previously, as well as the introduction of new agreements and MoUs for additional carbon market activities. This dynamic development underscores the growing commitment to effective climate action, as evidenced by the increasing number of collaborative efforts aimed at addressing environmental challenges.

FORMS AND SCALE OF COOPERATION

All the highlighted Article 6 activities have embraced a baseline-and-credit strategy. Presently, the activities exclusively intend to utilise CO_2e as the metric for ITMO transactions within Article 6. In terms of collaboration scope, a subset of activities is centred on projects and programmes, some of which aim to move to a sectoral scale, but currently still functioning on a more limited scale restricted to a first set of activities. At the same time, there are some initial efforts targeting more innovative policy crediting approaches, which still primarily remain in design phase. Table 3 shows the various scales of cooperation.

Programmatic / Project scale	Sectoral scale	Policy scale
AfDB: ABM	Canada: Latin america program	ETS Linking
Australia: IPCOS	NEFCO	Germany: BMWK
Germany: BMWK		GGGI/Norway Designing Article 6 Policy Approaches (DAPA)
Japan: JCM		World Bank: TCAF
Singapore		
South Korea		
Switzerland: KliK		
World Bank: SCF		

Table 3: Comparison of scale of cooperation

Source: Authors

CHOSEN ARTICLE 6 PATHWAYS

Some of the chosen pilot projects have explicitly expressed their intention to align with Article 6.2 cooperative strategies, whereas just one initiative is focusing on adopting the Article 6.8 non-market approach. The remaining pilot initiatives are impartial to specific instruments, indicating that they have the flexibility to align with either Article 6.2 or Article 6.4. The absence of concrete Article 6.4 activities can be explained by the slow pace of operationalising the mechanism which may change rapidly once activity registration is possible and transition of selected CDM activities will be underway (see chapter 2). Table 4 shows various Article 6 pathways taken by the various initiatives highlighted.

Instrument neutral	Article 6.2	Article 6.8
Canada: Latin America programme	Australia: IPCOS	AfDB: ABM
NEFCO	ETS Linking	
Sweden: SEA call for proposals	Germany: BMWK	
World Bank: SCF	GGGI & SEA: Mobilising Article 6 Trading Structures (MATS)	
	Japan: JCM	
	Singapore	
	South Korea	
	Sweden: SEA bilateral agreements	
	Switzerland: KliK	
	World Bank: TCAF	
	UAE	

Table 4: Various Article 6 pathways

Source: Authors

VOLUME AND PRICE OF ITMOs

Only a limited number of Article 6 activities aimed at generating ITMOs have made this data available. Out of the 13 initiatives highlighted in this study, only two provide insights into the volume and price of ITMOs. This relative scarcity of information can be attributed to the fact that ITMO generation is still in its earlier stages, with many countries and entities in the process of negotiating and signing bilateral agreements. Despite the current lack of comprehensive data, the potential for ITMOs to play a significant role in global climate action remains substantial, especially as more countries engage in cooperative mechanisms and share their emission reduction achievements through these international transactions.

The JCM has reported a total of 0.127 million ITMOs at an average rate of USD 36 per tonne of CO_2e. In contrast, Switzerland's Klik Foundation has disclosed having contracted a significantly larger volume of 8.7 million ITMOs, priced at USD 23.50 per tonne of CO_2e. These varying volumes and prices of ITMOs demonstrate the diversity within the international carbon market and highlight the potential for further growth and engagement as countries and entities continue to participate in emissions reduction initiatives and cooperative mechanisms. Moreover, the limited data availability and still small overall volume of contracted or reported ITMO transactions shows that Article 6 cooperation remains in its infancy globally from a practical perspective.

LEVEL OF INVESTMENT

While most of the activities have yet to dedicate and/or disclose financial provisions for their activity execution, a few have already earmarked significant funding. Some initiatives are still in their preparatory stages, with recently signed MoUs, wherein financial allocations have not been disclosed or established. There is an approximate total of at least USD 1.8 billion that has been made accessible for the advancement and realisation of Article 6 undertakings. Figure 5 represents the number of investments committed to Article 6 activities.

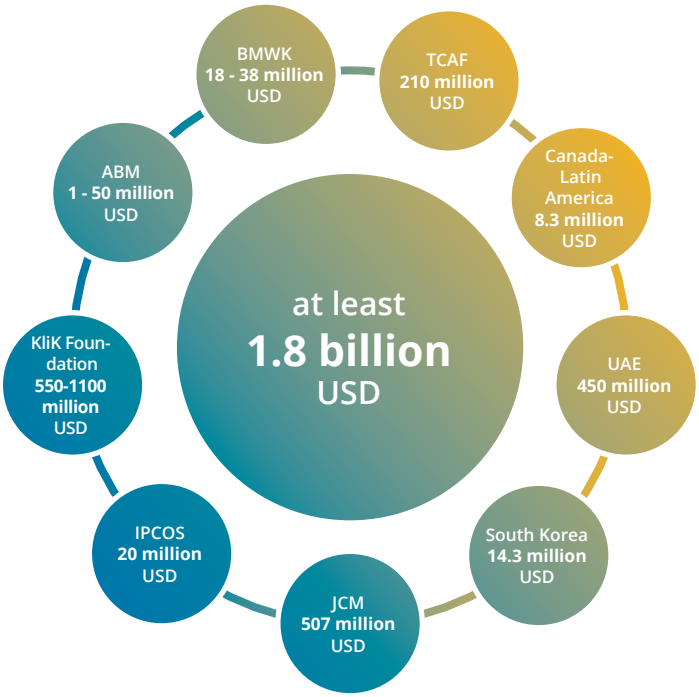


Figure 5: Indicative financial resources committed to Article 6 activities[2]

Source: Authors

ACTIVITIES BY SECTOR

Until now, the chosen Article 6 activities have concentrated on five specific sectors. A considerable number of these initiatives are centred around enhancing the energy supply sector, encompassing elements like decentralised solar mini-grids, geothermal energy, and domestic biogas digesters. The energy demand sector is being tackled through strategies to enhance energy efficiency in both industries and households, with a focus on enhancing the efficiency of production facilities, buildings, and appliances, such as improved cook stoves. Additionally, several other

[2] This considers the exchange rates converting from various currencies to USD as of September 2023

pilots are directing their efforts toward the waste, land-use sectors, and most recently blue carbon. Figure 6 shows the various Article 6 initiatives by sector.

Energy supply	Energy demand	Waste	Blue carbon	Land-use
Germany: BMWK Japan: JCM Sweden: SEA Switzerland: KliK World Bank: SCF	Japan: JCM Switzerland: KliK World Bank: SCF	Canada: Latin America Programme Japan: JCM NEFCO South Korea Switzerland: KliK Wold Bank: SCF	UAE: Blue Carbon	AfDB: ABM Australia: IPCOS Singapore Switzerland: KliK UAE

Figure 6: Activities by sector

Source: Authors

VCM ACTIVITIES

In recent years, the volume of carbon credits traded in the VCM has been growing significantly, even though prices remained volatile. The issuance of VCM carbon credits dropped by 21% in 2022 to 279 Mt, compared to 2021, triggered by uncertainty of the global economic outlook. Despite this overall drop in issuance levels, some activity types witnessed increased issuances in 2022. Issuances from energy efficiency, industrial gases, and coal mine methane activities were up by 30%, 267%, and 212%, respectively (Mikolajczyk and Bravo, 2023). There is a growing global awareness of the urgent need to address climate change, leading to increased recognition of the importance of reducing greenhouse gas emissions. As a result, both public and private sector stakeholders are voluntarily setting sustainability goals and seeking ways to compensate for their emissions, driving up demand. Additionally, regulatory developments have also contributed to the increased demand for carbon credits. Mandatory emissions regulations and carbon pricing mechanisms have been implemented or proposed in certain regions, offering incentives to use carbon markets to comply with regulations or to achieve additional emission reductions beyond the requirements. More crucially, Article 6 of the Paris Agreement plays a significant role in the demand for VCM credits, as Article 6.2 implicitly recognises the VCM through authorisation categories, which subsequently enables the VCM to carve out a role in the evolving international cooperation on carbon markets. As explained above, Article 6.2 guidance also applies to VCM transactions regarding NDC target achievement, and related accounting and reporting questions.

4. CONCLUSIONS

The adoption of the Article 6 rule book, including during COP26 in 2021, represents a landmark agreement for international carbon market rules even though these remain unfinished and evolving. Recent events, such as COP27 and the 58th Sessions of the UNFCCC Subsidiary Bodies, have marked substantial progress in elaborating further key technical elements of Article 6 rules. Negotiations and regulatory developments for finalising the rules for Article 6.2, Article 6.4, and Article 6.8 are expected to continue at least until 2024 but will continue to evolve beyond that. Key challenges remain unresolved, encompassing accounting, reporting, eligibility of activities, and host party authorisation. These issues underline the complexities inherent in crafting a framework that can efficiently and equitably guide international climate cooperation. Moreover, the unfinished business of crafting international carbon market rules also delays the full establishment of national institutional frameworks.

Regulatory developments concerning the operationalisation of the A6.4 Mechanism, as well as the broader Paris Agreement alignment of independent crediting standards may further accelerate ITMO transaction volumes in the short term. The A6.4SB ensures proper functioning and adherence to guidelines, promoting transparency, accountability, and environmental integrity within projects. CDM transition may act as a fast start for the Article 6.4 mechanism. The interplay between capacity-building programmes and the A6.4 mechanism generates a synergistic effect, ensuring not only the adoption but also the sustainable and impactful development of Article 6.4 activities. Key independent crediting standards such as the Gold Standard have also worked towards aligning their rules and procedures with Article 6.

Some Article 6 activities have moved from initial pilot phases to full implementation, but no rapid growth of global carbon market cooperation can currently be observed (yet?). These endeavours not only test the operationalisation of vital concepts under Article 6 but also serve as platforms for enhancing the capacities and knowledge of countries and stakeholders, enabling more effective cooperative mechanisms. Countries and entities involved in these activities express their intention to eventually transfer or acquire ITMOs or generate results-based units under non-market approaches.

Article 6 activities remain intricately linked with capacity-building programmes. As countries need to establish complex Article 6 participation requirements, these components play pivotal roles in shaping the evolution and effectiveness of Article 6 initiatives. Capacity-building programmes continue to provide essential support to countries, helping them to understand and implement Article 6 by enhancing their institutional capacities, technical expertise, and stakeholder engagement. While Japan has initiated efforts to improve the coordination of capacity building, there is not yet a coherent picture on the adequacy of current efforts, as most host countries are still at rather preliminary stages of establishing participation requirements.

It is essential to highlight the **growing emphasis on Article 6 activities geared towards the creation of ITMOs.** These activities recognise the potential of ITMOs as a mechanism for fostering international cooperation in achieving climate goals. ITMOs facilitate the exchange of emission reductions between countries, leveraging their strengths to collectively advance toward emission reduction targets. This heightened focus underscores the crucial role that market mechanisms and cross-border collaboration can play in accelerating global climate action. By channelling efforts into the generation of ITMOs through Article 6, countries position themselves not only to enhance their own mitigation efforts, as indicated in their NDCs, but also contribute

to a more collective and effective response in meeting the targets of the Paris Agreement. The increasing number of Article 6 buyers from the Global South is encouraging for the overarching objective of injecting ambition into global mitigation efforts. However, actual ITMO transactions and investments have not progressed to a significant scale since the Article 6 rulebook has been agreed.

PART TWO

DEEP DIVE INTO HOST COUNTRY FRAMEWORKS

TABLE OF CONTENTS

1. DELVING INTO TRENDS AND BEST PRACTICES IN ARTICLE 6 READINESS

International and national processes are two essential components of Article 6 operationalisation; and, as the international part now stands firm with the adoption of the Article 6 Rulebook, host countries and national processes are taking centre stage. The development of national Article 6 frameworks is one of the central pillars of host country readiness, and action on clarifying the details and rules of Article 6 engagement is gaining significant attention. As Part One of this study has described, despite outstanding issues, the Article 6 Rulebook now provides international guidance on carbon market implementation. At the same time, it is necessary to translate that guidance into coherent, effective, efficient, and transparent rules on the national level – considering each host country's unique national circumstances, marrying international guidance with local insights and decision-making.

Therefore, host countries intending to use Article 6 to achieve their NDC targets are starting with a blank canvas in the process of devising approaches that best serve their national priorities. In this endeavour, host countries are drawing upon their past experiences and REDD+ frameworks, including valuable lessons learned from the mixed outcomes of the CDM under the Kyoto Protocol. These first steps will underpin the successful implementation of Article 6. Article 6 readiness and the establishment of national frameworks is a dynamic field with notable momentum and numerous initiatives. The aim of Part Two of this study is to provide an overview of host country Article 6 readiness through a detailed deep dive into currently observable processes and developments.

Although overlaps in countries' approaches are still difficult to define, some common trends and best practices stand out within the analysed countries. The following sections take an empirical approach, guided by a set of key questions, outlined in Figure 1.

Figure 1: Guiding questions according to Article 6 readiness pillars

Source: Authors

The above set of questions follow previously identified Article 6 building blocks,[2] which are necessary to create an enabling environment for Article 6 engagements. To answer the guiding questions, the study relies on data collected from 51 countries and their progress on Article 6 implementation. Taking this route to analysing host country Article 6 readiness is beneficial in two ways. Firstly, through taking a closer look at various host country approaches through examples and individual case studies of early movers, such an empirical strategy allows for their examination in detail and in the context of specific national circumstances. Secondly, through aggregating the so-obtained information, the following sections can identify common trends and best practices, complementing the deep dive with a broad overview of the process. The countries (as listed in Table 1) were selected based on three predefined selection criteria:

i) **Level of institutional and regulatory advancement:** The country has or is putting in place an overarching institutional and regulatory framework for Article 6, and this framework is further advanced compared to other host countries, serving as an example to highlight how Article 6 is being implemented.

ii) **Pilot transaction:** The country has engaged in and/or is currently preparing an Article 6 pilot transaction and, therefore, serves as a frontrunner example for the practical implementation of bilateral-or multilateral agreements.

iii) **Representativeness:** The selection of case studies should ensure geographical representativeness and the inclusion of smaller and/or less developed countries.

The study also builds on existing literature and materials on Article 6 pilots and regulatory landscapes, such as, for instance, adephi's work on Article 6 preparations in 20 countries, focusing on governance and administrative frameworks, legal frameworks, and infrastructure.[3] The contribution of the present work is incorporating additional Article 6-related issues in the analysis (e.g., exploring benefit sharing in more detail), in addition to drawing on information from a larger pool of countries.

[2] Find a more detailed overview of the building blocks in the Article 6 Readiness Blueprint, available here:
https://westafricaclimatealliance.org/2022/06/04/blueprint-for-article-6-readiness-in-member-countries-of-the-west-african-alliance/

[3] For more information, see report at: *https://adelphi.de/en/publications/implementing-article-6-an-overview-of-preparations-in-selected-countries* (accessed 25 October 2023).

Central America	Costa Rica Mexico
Caribbean	Dominica Dominican Republic
South America	Brazil Chile Colombia Peru
Southeast Europe	Georgia Moldova
Middle East, North Africa, and Turkey (MENAT)	Azerbaijan Egypt Jordan Morocco Saudi Arabia Tunisia Turkey
East Africa	Ethiopia Kenya Tanzania Uganda
West Africa	Burkina Faso Côte d'Ivoire Ghana Nigeria Senegal
Central Africa	Gabon Rwanda
Southern Africa	Madagascar Malawi Namibia South Africa Zambia Zimbabwe
Central Asia	Mongolia
East Asia	China
South and Southeast Asia	Bangladesh Cambodia India Indonesia Laos Maldives Nepal Pakistan Papua New Guinea Philippines Thailand Vietnam
Pacific	Fiji Palau Vanuatu

Table 1: List of analysed countries, by region

Source: Authors

The sections below are organised in accordance with the guiding questions in Figure 1. Section 2 and its subsections discuss governance, institutions, and legal arrangements, providing implementation examples, discussing the development of institutional setups, and identifying three distinct approaches (top-down, bottom-up and ad hoc) to designing Article 6 frameworks. Then, Section 3 and its subsections move on to analysing Article 6 strategies and authorisation requirements, including existing approaches to eligibility criteria and benefit-sharing arrangements. After that, Section 4 incorporates analyses of a broad range of issues connected to Article 6 readiness, including regulating the VCM and REDD+, approaches to CDM transition, the progress made in developing infrastructure and setting up accounting and reporting systems, and the readiness support initiatives available to host countries. Finally, Section 5 concludes with the main takeaways.

2. GOVERNANCE, INSTITUTIONS, AND LEGAL ARRANGEMENTS

2.1. GOVERNANCE

SUMMARY OF FINDINGS

- Most host countries are still in the process of developing legal frameworks for Article 6, with only a handful of them already having frameworks in place.
- Rather than focusing exclusively on Article 6, host countries are developing frameworks that cover carbon markets more generally (i.e., both Article 6 and the VCM). Article 6 is one of the components addressed by these upcoming frameworks – but not the only one.
- Depending on their legal systems and national circumstances, countries are taking one of three main approaches: 1) a bottom-up approach, in the form of administrative frameworks; 2) a top-down approach, through adopting legislation; and 3) ad hoc measures, involving interim guidelines.

Countries must decide how to govern Article 6 activities and what type of legal and institutional frameworks they enact for Article 6 implementation. This is because Article 6 and its implementing decisions do not prescribe how countries should develop an authorisation and approval process or how countries should domestically govern Article 6 activities. Article 6.2 provides only that participating parties must have arrangements in place to authorise the use of ITMOs as a prerequisite to participate in cooperative approaches under Article 6.2 (UNFCCC 2022).

Under Article 6, host countries can authorise mitigation outcomes (under Article 6.2) or A6.4ERs (under Article 6.4) for use towards the NDC of another country, for international mitigation purposes other than NDC achievement (OIMP), or for "other purposes". Additionally, the Article 6.4 rules, modalities, and procedures (RMP) require host countries to authorise entities participating in the Article 6.4 mechanism and approve activities prior to their registration under the mechanism. While not explicitly required for cooperative approaches under the Article 6.2 guidance,[4] it may still be useful for host countries to approve activities or sectors generating mitigation outcomes for Article 6 transactions. This then requires host countries to have some domestic legal framework in place for authorisations and approvals under Article 6.

The following sections examine host countries' progress in establishing overarching governance frameworks given the expanded roles and responsibilities for national governments under Article 6. Specifically, countries' legal frameworks, regulatory frameworks, and institutional set-ups are considered.

[4] Under the Rules, modalities and procedures for the mechanism established under Article 6.4 (Article 6.4 RMP), host countries are required to approve mitigation activities before they are registered. There is no similar requirement for approval of activities under the Article 6.2 guidance on cooperative approaches.

2.1.1 DOMESTIC LEGAL AND POLICY FRAMEWORKS ON ARTICLE 6: CURRENTLY AT FORMATIVE STAGES

Article 6 frameworks in this section refer to any law, regulation, decree, policy, or guidelines developed by countries to govern the various components of Article 6 within the country. Currently, only very few host countries have such legal frameworks in place, although many Parties have started building their readiness. Further, when countries have implemented relevant frameworks, these frameworks mostly cover concepts applicable to all carbon market instruments (including the VCM) more generally, although they may specifically address Article 6. For instance, the frameworks address issues such as who can develop carbon market activities, primary rights to emission reductions, registration of all carbon projects in a national registry, Article 6 related processes (such as authorisation), and interaction between VCM and Article 6 activities in the country. Out of the 51 countries analysed in this chapter, only eight countries[5] have Article 6 frameworks, with varying degree of detail. These are Ghana, Fiji, Indonesia, Kenya, Tanzania, Thailand, Zambia, and Zimbabwe. Of these countries, Ghana has one of the most extensive frameworks on Article 6. Eleven out of the assessed 51 countries are currently developing frameworks.

2.1.2 ARTICLE 6-RELATED PROCESSES AS ONE COMPONENT OF LARGER CARBON MARKET FRAMEWORKS

The above mentioned eight countries' existing frameworks each address Article 6, but not exclusively. In other words, these frameworks cover general aspects of carbon markets (both Article 6 and the VCM), with Article 6-related processes being one component covered. Some frameworks cover Article 6 to a more specific degree than others.

For instance, the **Fiji** Climate Change Act addresses concepts applicable to all carbon market activities, such as carbon rights, project registration, the issuance of emission reduction units from Fiji's national registry and by international carbon standards. In addition to these more general guidelines, the legislation also includes specific requirements for Article 6 by requiring anyone conducting an activity for Article 6 to obtain the consent of the Director of Climate Change to register, conduct or operate Article 6 mitigation activities.

Zambia's interim guidelines also address carbon markets generally. These guidelines define carbon project principles, eligibility criteria for projects considered for development, approved methodologies, and project approval processes. in contrast, **Ghana**'s Article 6 Framework addresses Article 6 activities while also including provisions for guiding VCM activities in the country.

Of the frameworks currently under consideration, **Jordan**'s Article 6 Framework is one of the few that is specific to Article 6 only.[6] This framework does not include provisions on VCM projects, though it does allow for the authorisation of ITMOs for voluntary purposes.

[5] These are: Zimbabwe's Framework, Zambia's Interim Guidelines, Thailand's guidelines, Indonesia's Presidential Regulation 98 of 2021 (PR 98/21) and Indonesia's Ministerial Regulation 21 of 2022 (MR 21/22); Ghana's framework, Fiji's climate change Act, Kenya's Climate Change Act, and Tanzania's Environmental Management (Control and Management of Carbon Trading) Regulations. It is, however, important to note that Tanzania's Carbon Markets do not particularly address Article 6.

[6] See Jordan's draft policy framework for cooperative approaches under Article 6 and other international carbon markets at: *https://www.moenv.gov.jo/ebv4.0/root_storage/en/eb_list_page/jordan_a6_policy_framework_draft.pdf* (accessed 3 October 2023).

2.1.3 THREE APPROACHES IN DESIGNING ARTICLE 6 FRAMEWORKS: TOP-DOWN, BOTTOM-UP, AND AD HOC

2.1.3.1 TOP-DOWN APPROACH: LEGISLATIVE ACT OR SUBSIDIARY LEGISLATION

Countries establish or consider implementing diverse frameworks based on national circumstances, legal systems, and whether there are existing interim measures. One approach to developing these frameworks is the 'top-down' approach, which is the most common one used by host countries. In this approach, a new statute is adopted through the legislative process. In addition, some countries use existing laws to develop subsidiary legislation, such as regulations and sub-decrees. The top-down approach has been adopted or is under consideration by at least nine countries.[7]

Host countries often adopt new legislation or amend existing legislation (climate change laws, in most cases) to develop their Article 6 frameworks. However, these pieces of legislation – both new and existing – are generally broad and may only include carbon markets as a minor component of the law. Ultimately, this means that such statutes generally do not include detailed, substantive, or procedural provisions on Article 6, as these are usually included in regulations, decrees or guidelines implementing the statute.

For instance, **Fiji**'s Climate Change Act (Section 111) grants the Minister responsible for climate change the power to make regulations to implement the carbon market provisions of the Act. Such regulations are intended to provide more detail on procedural and substantive issues, such as the eligibility criteria for mitigation activity proponents and authorisation, the approval and authorisation process, the registration of carbon market activities, and the conditions for transferring ITMOs.[8]

Another example is **Kenya**, which has updated its Climate Change Act through the Climate Change (Amendment) Act.[9] The Amendment Act introduces the regulation of carbon markets, and provides for requirements that all carbon market activities (whether developed for Article 6 or VCM transactions) need to comply with, including benefit sharing requirements.[10] The Climate Change Act allows the Minister responsible for climate change to make regulations, and it is expected that the Minister will make regulations to operationalise the carbon market provisions introduced by the Amendment Act.

In addition to legislation, other host countries are developing or have developed subsidiary legislation. Such an approach happens mostly in countries with overarching climate change or environmental laws that allow an executive body to develop subsidiary legislation. Examples include Indonesia's Ministerial Regulation No 21 of 2022, **Cambodia**'s Sub-decree on rules and procedures for GHG emission reduction mechanisms (under consideration),

[7] These are: Brazil, Cambodia, Kenya, Fiji, Indonesia, Nepal (ongoing revision of law), Senegal, Uganda, and Vietnam.

[8] See Fiji's Climate Change Act 2021 (Act No. 43 of 2021) at: *https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/113915/142990/F-335404316/FJI113915.pdf* (accessed 3 October 2023).

[9] See Kenya's Climate Change (Amendment) Act (Act No. 9 of 2023) at: *http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/2023/TheClimateChange_Amendment_Act_No.9of2023.pdf* (accessed 3 October 2023).

[10] Examples of issues covered by the Act are: (i) principles that carbon market activities should adhere to; (ii) the types of markets that the country will participate in (VCM, multilateral and bilateral agreements and trade with private entities); (iii) requirement for environmental impact assessment; (iv) benefit sharing; (v) share of proceeds; and (vi) a national carbon registry.

and Tanzania's Environmental Management (Control and Management of Carbon Trading) Regulations.

2.1.3.2 BOTTOM-UP APPROACH: ADMINISTRATIVE FRAMEWORKS

The 'bottom-up' approach is the second most common approach that countries take in developing frameworks relevant to Article 6. In the bottom-up approach, countries develop administrative frameworks based on existing laws. At least five countries are considering developing A6 aligned national administrative frameworks for carbon market implementation.[11] These frameworks are developed by ministries or environment authorities, which have administrative powers granted to them by existing statutes, typically environmental or climate change statutes.

The frameworks are more detailed than legislative approaches, and address procedural issues (e.g., the authorisation, approval, and mitigation activity registration processes), the responsibilities of various institutions, and substantive issues (e.g., eligibility criteria for authorisation and approvals). The expectation is that, in the long-term, the country will amend the existing overarching legislation or develop a new law to incorporate aspects of Article 6 addressed in the framework.

For example, as noted previously, **Ghana** has developed one of the most extensive Article 6 frameworks to date. See Table 2 below for details on the legal basis for this framework. Ghana's framework covers eligibility criteria for activities, procedural aspects (e.g., authorisation, project development process), institutional arrangements, operationalisation of the Article 6.4 mechanism, and the VCM – among other aspects.

Zimbabwe is another country that has an extensive carbon markets framework that also addresses several Article 6 components, including requirements for project developers (regarding Article 6.2 and 6.4 transactions); the procedures for activity development and authorisation of ITMOs; and the institutional framework.

Table 2: Legal Basis for Ghana's Article 6 framework

Case study: Legal basis for Ghana's Article 6 Framework	
Entity that developed the framework	Environmental Protection Agency (EPA)
Statute granting the entity the power to develop the framework	Environmental Protection Agency Act 490, 1994. The Act mandates EPA to prescribe standards and guidelines on all aspects of the environment
Expected legislative changes to incorporate Article 6 aspects	EPA is undergoing review and amendment to elaborate further aspects of Article 6. Additional legislative instruments will be developed to strengthen Article 6 transactions

2.1.3.3 AD-HOC MEASURES: INTERIM GUIDELINES

Next, some host countries take ad hoc measures to guide Article 6 activities. For instance, some host countries like **Zambia** and **Thailand** have developed a set of interim guidelines to still benefit from Article 6 while a more substantive legal framework is developed. Such ad hoc guidelines are developed by relevant ministries or administrative bodies. Ad hoc guidelines provide

[11] These are Zimbabwe, Ghana, Jordan, Malawi, and Rwanda.

preliminary administrative measures and procedures to temporarily guide government entities and market actors on carbon market activities, including Article 6. For instance, Zambia's Ministry of Green Economy and Environment developed the Interim Guidelines on Carbon Markets and Trading in the interim period until the enactment of the Climate Change Bill.[12] While not comprehensive, Zambia's Interim guidelines address eligibility criteria for activities or interventions that can be approved for carbon market activities, approved methodologies, and the process for approval of carbon projects and authorisation.

2.1.4 ARTICLE 6 FRAMEWORKS: DESIGNS VARY, BUT CERTAIN ELEMENTS ARE COMMON ACROSS INITIAL FRAMEWORKS

There are certain minimum elements that host countries should define in their domestic frameworks for successful implementation of and compliance with Article 6. This includes defining:

- **(i)** the substantive issues relating to eligibility criteria for approvals and authorisations
- **(ii)** the processes relevant for Article 6 (e.g., the process of applying and obtaining authorisations)
- **(iii)** institutional arrangements
- **(iv)** infrastructure to record and track emission reductions and removals from mitigation activities in the country; and
- **(v)** fees and withholding ITMOs.

While Article 6 frameworks vary in their design and level of technicality, with some being more detailed than others, most host countries address the above minimum elements needed for Article 6 implementation. Several common elements are included in host countries' existing and upcoming frameworks for Article 6 implementation are:

- **The registration of all mitigation activities in a national registry:** Seven out of the eight host countries with existing frameworks establish national registries.[13] Consequently, they require all mitigation activities in the country (whether for Article 6.2, 6.4 or voluntary purposes) to be registered in the national registry.

- **The approval of activities for both Article 6.2 and 6.4 mitigation activities:** Under the Article 6.2 guidance, there is no requirement for host countries to approve mitigation activities. In contrast, the Article 6.4 mechanism does require host countries to approve mitigation activities prior to their registration. Article 6.2 guidance requires authorisation of ITMO use, but not approval of Article 6.2 mitigation activities. Despite these diverging requirements, some of the assessed host countries take an integrated approach, including approval for activities both under Article 6.2 and 6.4.

[12] See Zambia's interim guidelines (2022) on the handling of carbon markets and trading at: *https://www.mgee.gov.zm/wp-content/uploads/2022/12/Interim-Guidelines-Regulation-of-Carbon-Markets-in-Zambia-1.pdf* (accessed 3 October 2023).

[13] Examples are: Ghana Carbon Registry, established under Schedule 8 of Ghana's carbon markets framework; Fiji's National Registry, established under Section 61 of Fiji's Climate Change Act; Zimbabwe's National Carbon Registry, under Clause 4.2 of Zimbabwe's Carbon Credit Framework; Indonesia's National Registry System for Climate Change, under Article 1 of Presidential Regulation 98 of 2021; Thailand's Carbon Credit Registry, established by Carbon Credit Management Guideline and Mechanism; and Kenya's National Carbon Registry, under Section 23G of Kenya's Climate Change Act. Tanzania's Carbon Trading Regulation appoints a Registrar who is required to maintain a register of carbon projects.

The approval process is used by countries to ensure that mitigation activities meet minimum criteria. The most common requirements that host countries mandate for mitigation activities relate to (i) the mitigation activity's consistency with the country's NDC and its implication on NDC achievement; (ii) the activity's compliance with national laws; and (iii) the contribution of the mitigation activity to adaptation and sustainable development goals.

- **The eligibility criteria for mitigation activities generating ITMOs:** Host countries use different strategies to determine the eligibility criteria for generating ITMOs (e.g., conditionality of the NDC, strategic importance and national priorities, abatement costs, and contribution to the SDGs. These strategies are then translated into countries' respective Article 6 frameworks in two ways: 1) as specific lists of eligible and/or non-eligible activities ("green" and/or "red" lists), or 2) as broad eligibility criteria, such as sectors within the NDC or outside the NDC, NDC achievement, SDG goals, and beyond. The eligibility of activities and mitigation outcomes is then determined on a case-by-case basis through the approval and authorisation process.

  The level of detail for eligibility criteria, procedures, and other aspects of Article 6 are determined by the type of framework. For instance, where Article 6 is addressed through legislation, the frameworks tend to provide broad guidelines, with the expectation that more detailed criteria and processes would be determined through subsidiary legislation.

  Procedural aspects: The frameworks – particularly the more detailed ones, like subsidiary legislation and administrative frameworks – offer clear processes that pertain to the development and authorisation of activities under Article 6.

- **Fees and withholding authorised ITMOs as a national buffer reserve:** Countries' Article 6 frameworks have begun to determine the financial and/or in-kind fees payable at different project stages (activity development, approval, and authorisation). Another important consideration is whether the government withholds a portion of authorised ITMOs to serve as a buffer against the risk of overselling. More detailed frameworks – such as subsidiary legislation and administrative frameworks – typically address these components, rather than within broader legislation. Host countries' existing frameworks address fees and ITMO withholding differently, which is discussed further below.

- **Institutional arrangements:** All existing and forthcoming Article 6 frameworks address the institutional arrangements required to implement the various roles and responsibilities on Article 6. These institutional arrangements are discussed in Section 2.2.

The above-mentioned aspects are also discussed in Sections 2.2 (institutional set-ups), 3 (approval of mitigation activities, eligibility criteria, procedures, fees and ITMO withholding) and 4.3 (registries) below, including detailed analysis of selected host country approaches.

2.2 INSTITUTIONAL ARRANGEMENTS

SUMMARY OF FINDINGS

- Though most analysed countries have not yet defined their Article 6 strategies, several have made progress in allocating roles and responsibilities surrounding Article 6 implementation to key institutions.
- In this context, Ghana and Zimbabwe stand out as frontrunners given their well-defined Article 6 frameworks which clearly delineate the roles of various entities, including that of an authorisation entity, for the implementation of Article 6.

The successful implementation of Article 6 hinges on host countries establishing robust institutional arrangements that clearly define roles, responsibilities, and interactions between key entities engaging in Article 6 transactions. This section presents key findings on host countries' the institutional arrangements for managing Article 6 transactions.

2.2.1 DNA NOMINATIONS: ONLY HALF OF THE ANALYSED COUNTRIES HAVE NOMINATED AN ARTICLE 6.4 DNA

Only around half of analysed countries (23 out of the 51; the total number of nominated DNAs is 62) have communicated the establishment of an Article 6.4 Designated National Authority (DNA) to the UNFCCC. On a positive note: an increasing number of host countries (62) have nominated an A6.4M DNA as of October 2023. Interestingly, nine countries have identified the key institution responsible for Article 6.2 transactions but have not yet communicated an Article 6.4 DNA to the UNFCCC. This finding suggests that countries may either prioritise the UNFCCC governed framework (Article 6.4) or prioritise bilateral agreements for Article 6.2 transactions. However, in the absence of a formalised Article 6 strategy or decree, most host countries have not yet defined specific roles and responsibilities for relevant entities, even if they have communicated the focal point institution to the UNFCCC.

Many countries have not identified responsible entities for Article 6.2 or Article 6.4, suggesting that these countries are at an early stage of their readiness for Article 6 implementation and may require further capacity building and support.

Comparing the roles of countries' respective CDM DNAs and Article 6.4 DNAs reveals interesting patterns. Most countries' current CDM DNA has also been mandated to act as the Article 6.4 DNA, either at the ministry level or the directorate level. However, some countries take a different approach, instead opting to allocate the roles and responsibilities of the Article 6.4 DNA to a different entity. They do this by:

- Shifting the responsibilities of the Article 6.4 DNA to a higher level of government, such as from the directorate or environmental authority to the ministry level). This approach has been observed in countries like the **Dominican Republic and Zambia**.

- Changing the responsible ministry altogether, such as in the cases of **Ethiopia and Morocco**, which have chosen to shift the Article 6.4 DNA role to a different ministry than before.

- Specifying the entity under a line ministry, such as Fiji, i.e., a specific entity under the lead of the line ministry has been mandated.

2.2.2 ROLES AND RESPONSIBILITIES FOR ARTICLE 6: COUNTRIES ALLOCATE MANDATES ACCORDING TO THREE APPROACHES

Countries utilise diverse and diverging institutional arrangements for Article 6 implementation and regulation. Analysis of these approaches revealed three main categories of institutional arrangement:

1. **Committee-led:** Some countries designate committees comprised of various governing bodies, such as ministries and directorates. These bodies work together, forming an overarching authority for Article 6 policy coordination.

For instance, **Jordan** established a National Climate Change Committee (see Figure 2). This committee consists of the Ministry of Environment (MoEnv), the Directorate of Climate Change of the MoEnv, and the National Technical Advisory Committee (NTAC). The functions of the Committee include:

- Agreeing on the overall scope of Article 6 engagement, such as relevant sectors, technologies, project types, methodologies, and more.
- Agreeing on the use of elements of international crediting programmes, or on the recognition of any existing crediting programmes/independent standards.
- Approving procedures for the authorisation of mitigation outcomes.
- Approving reports to be submitted to the UNFCCC.
- Mitigation actions, including corresponding adjustments.
- Designating other regulatory and administrative functions to the Ministry of Environment and the Directorate of Climate Change of the Ministry of Environment.

While the committee is responsible for the above functions together, the committee's individual bodies also have specific, unique roles and responsibilities:

MoEnv: Rulemaking and overseeing the performance of Article 6 activities, including the authorisation of ITMOs.

Directorate of Climate Change of the MoEnv: Administrating Article 6 activities, including reviewing and registering eligible projects and their crediting period and executing transfers for ITMOs.

National Technical Advisory Committee (NTAC): Providing technical advisory for implementation of Article 6 activities, including analysis of the impact of potential projects/transfers on NDC compliance.



Countries like **Brazil, India and Zimbabwe** have similarly established committees responsible for Article 6 implementation that consist of multiple operative bodies with various areas of expertise. Brazil's committee involves both environment and economy ministries, while India's committee includes cross-sectoral representation from the ministries of energy, health and family welfare, and commerce and industry. However, unlike in the case of Jordan, the precise roles, and responsibilities of individual committee members in both Brazil and India remain undefined. Zimbabwe's framework has established an inter-ministerial Cabinet Committee on Carbon

Trade responsible for providing policy direction and oversight as well as ensuring compliance with national laws and international treaties. The Ministry of Climate Change is then responsible for policy development and establishing relevant institutions in consultations with other government entities. Furthermore, it is responsible for the authorisation of the transfer of carbon credits.

Case study

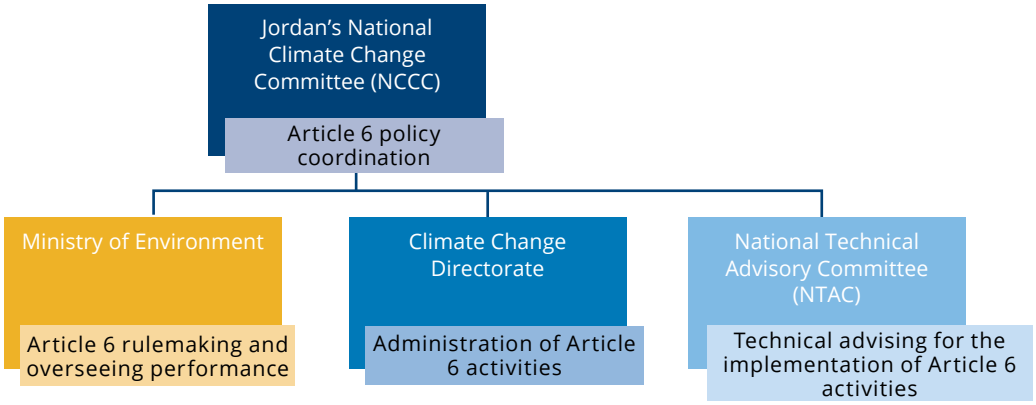


Figure 2: Overview of Jordan's Article 6 Institutional Framework

2. Ministry-led: Other countries have designated a relevant ministry for Article 6 policy direction.

Ghana has designated the Ministry of Environment, Science, Technology, and Innovation (MESTI) as the body responsible for overseeing and providing policy direction on Article 6, including serving as the authorisation entity and working with the EPA to host the Carbon Market Office (CMO). Ghana has also established a national structure to perform assigned functions (see Figure 3 below):

CMO: Dealing with day-to-day management, including implementing policies on transactions, MRV, registry operations, creation, and transfer of ITMOs, reporting, and applying corresponding adjustments.

Governing Committee: Developing and approving rules for transactions and carrying out mandates assigned by the Ministry.

Carbon Market Inter-Ministerial Committee: Providing high-level strategic support and meeting regularly to guide Ghana's participation in Article 6.2.

Carbon Market Technical Committee (CM-TAC): Providing support to the Governing Committee and CMO on authorisation, approved methodologies, validation and verification entities, and issuances of mitigation outcomes.

Countries such as **Rwanda** take a similar approach to that of Ghana. In Rwanda, the Ministry of Environment is responsible for Article 6 implementation. The ministry has designated the Rwanda Environment Management Authority (REMA) as the DNA for Article 6.4 and is mandated to coordinate all activities related to Article 6.

Case study

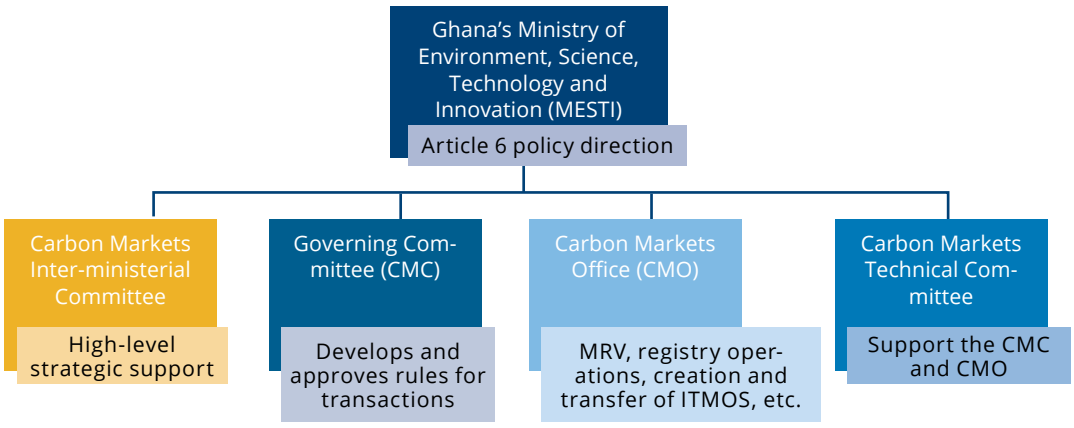


Figure 3: Overview of Ghana's Article 6 Institutional Framework

3. Department-led: In other countries, the responsibility for implementing Article 6 falls on specific directives or departments within relevant ministries:

- **Thailand:** The Ministry of Natural Resources and Environment (MONRE), acting through the Office of Natural Resources and Environmental Policy and Planning (ONEP) and the Thailand Greenhouse Gas Management Organisation (TGO), is responsible for implementing Article 6.
  - **ONEP:** Issuing letters of authorisation, performing corresponding adjustments, and reporting under the UNFCCC.
  - **TGO:** Administrating the activity standards and the registry.
- **Peru:** The General Directorate of Climate Change and Desertification (DGCCD) of the Ministry of Environment (MINAM) has been designated as the responsible body for implementing Article 6 while also serving as the DNA for Article 6.4.
- **Uganda:** The Climate Change Department of the Ministry of Water and Environment (MWE) has been designated for the implementation of Article 6.

3. STRATEGIES AND AUTHORISATION REQUIREMENTS

3.1 ARTICLE 6 STRATEGIES AND AUTHORISATION REQUIREMENTS

SUMMARY OF FINDINGS

- Article 6 activities should be aligned with a host country's NDC development and implementation. An overarching Article 6 strategy is crucial for coordinating the use of international market mechanisms to meet NDC targets.
- There is no singular approach that host countries use to determine the eligibility of Article 6 activities. However, of the existing approaches for determining eligibility, positive lists are the most common.
- Countries use various approaches to regulate Article 6 activity approvals and ITMO authorisation, with some using stricter criteria and others using looser criteria. Regarding fee structures – which are a crucial component of an effective Article 6 strategy – countries either impose a structure that takes the form of share of proceeds and/or one of fixed charges.

3.1.1 TO AUTHORISE OR NOT TO AUTHORISE: ENSURING THAT ARTICLE 6 SUPPORTS NDC GOALS

Given their relation and relevance to NDCs, Article 6 activities must be considered during host countries' NDC development and implementation processes (West African Alliance on Carbon Markets and Climate Finance, 2022). Several countries mention Article 6 in their NDCs in varying ways (Figure 4). Article 6 activities can help achieve NDC targets. For this to happen successfully, host countries require an overarching Article 6 strategy utilise the international market mechanism. It is essential to understand that an Article 6 strategy is not a standalone policy; it should be integrated into NDC implementation plans, ensuring that host countries align their NDC targets with their Article 6 goals.

An Article 6 strategy should ensure (i) strategic alignment with the NDC; (ii) consistency in implementation and reporting, and (iii) avoidance of adverse consequences in the application of Article 6 (West African Alliance on Carbon Markets and Climate Finance, 2022). This strategy may outline how host countries will utilise Article 6.2 and 6.4, including the eligible sectors and technologies, the allocation of roles and responsibilities among government departments, oversight processes, and the volume of potential transfers of mitigation outcomes.

Under the Article 6.2 guidance, there is no requirement for host countries to approve mitigation activities. This contrasts with Article 6.4, which requires host country approval for mitigation activities prior to their registration under the mechanism. Despite these diverging requirements, some host countries take an integrated approach – one that includes approval for activities both under Article 6.2 and 6.4.

This integrated approach is demonstrated by **Indonesia, Zambia, Zimbabwe, and Fiji**, each of which require that all mitigation activities – whether for Article 6.2 or Article 6.4 – are approved by the responsible national entity within each country. For instance, in Zimbabwe, project developers submit a PIN (Project Idea Note) to the Carbon Trade Committee (CTC). After the PIN is approved, project developers can begin developing a comprehensive project design document. Similarly, Zambia's interim guidelines include a screening process for project concept notes. If a project's concept note passes the screening process, a full project proposal can then be submitted to the DNA, which in turn assesses the proposal and issues a letter of no objection. Likewise, Fiji requires project proponents to apply for and obtain the consent of the Director of Climate Change before registering or conducting any mitigation activity. The following sections look at practical experience from host countries in establishing activity eligibility and benefit sharing arrangements.

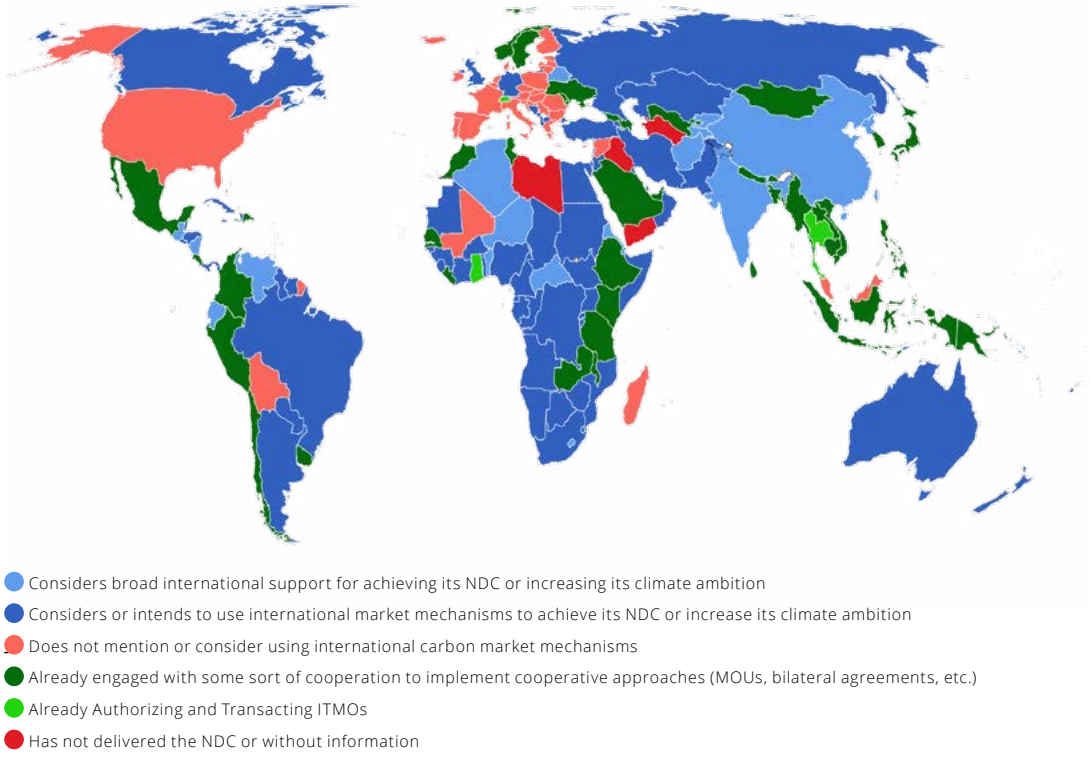


Figure 4: Article 6 in NDCs

Source: IETA (2023)

3.1.2 ARTICLE 6 STRATEGIES: NO CLEAR TREND ON ELIGIBILITY CRITERIA

Eligibility criteria are a key component of any national carbon market strategy. They determine the activity types that can be implemented and potentially the amount and type of internationally transferrable credits. Establishing eligibility criteria that guide the activity approval and/or ITMO authorisation process is important for several reasons, including:

- Ensuring additionality, environmental integrity, and social integrity of projects
- The importance of aligning Article 6 activities with existing climate strategies of the host country
- The need to avoid overselling ITMOs (relevant for authorisation).

For host countries, there are several different approaches to eligibility criteria for activities and for ITMO authorisation. Host countries may select multiple approaches based on their national

circumstances and the availability of information on NDC implementation plans and sectoral or sub-sectoral targets. The distinction between the two categories (i.e., activity eligibility and ITMO eligibility) is somewhat artificial; some approaches used to determine activity eligibility can be adopted to determine ITMO authorisation eligibility and vice versa. See the table below for a delineation of the two concepts; it is important to note, however, that some countries may not distinguish between them.

Approval	Granting permission to set up a carbon project (under Article 6)
Authorisation	Granting permission for the international transfer of mitigation outcomes as ITMOs

Under Article 6.2, there is practically no distinction between the two concepts, given that activities receive approval with the understanding that the generated mitigation outcomes will be authorised. Article 6.4 allows the trade of non-authorised mitigation outcomes (A6.4ERs), thus making the distinction between approval and authorisation necessary.

3.1.3 ELIGIBILITY CRITERIA: POSITIVE LISTS ARE THE MOST STRAIGHTFORWARD OPTION

NDC conditionality is one of several pillars of Article 6 eligibility (for both approval and authorisation) (Greiner et al., 2021). Countries distinguish between conditional and unconditional targets: unconditional targets are those that a country implements through the means of their own resources and capabilities, whereas conditional targets are subject to international support, including but not limited to Article 6 mechanisms.

Article 6 frameworks can take two approaches in establishing the eligibility criteria for generating ITMOs: (i) by creating lists of specific activities that are deemed eligible ("positive lists") or non-eligible ("negative lists") or (ii) by establishing overarching eligibility criteria that can be applied to activities, but without explicitly naming which activities are deemed eligible.

Regarding the first approach, some countries – like **Ghana, Zambia, and Thailand** – provide a specific list of the activities and technologies that are eligible to generate ITMOs. In addition to identifying eligible activities, Ghana goes a step further by providing a "red list" of activities from which mitigation outcomes will not be authorised. Likewise, **Indonesia**'s Ministerial Regulation provides both "green" (or "positive") lists and "red" (or "negative") lists to indicate eligible and ineligible activities. Positive lists can also be drafted based on other national priorities, such as technology transfer. For example, **India**'s positive list of types of activities eligible for Article 6.2 cooperative approaches contains renewable energy with storage, green hydrogen, tidal energy, green ammonia, and sustainable aviation fuel, among other activities.[14] **Zimbabwe** has instead defined "carbon credit trade sectors," which include energy, bioethanol, transport and aviation, forestry, agriculture, waste to energy, and industrial processes and mining.[15]

Rather than creating a list of eligible activities, some country frameworks take the second approach of establishing broad eligibility criteria for activity approvals. This broad eligibility criteria may deal with sectors within or outside of the country's NDC, NDC achievement, SDG goals,

[14] See the list of activities at: *https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1900216* (accessed 3 October 2023).

[15] See Carbon credit framework for Zimbabwe, 2023

or other categories. The eligibility of activities and mitigation outcomes is then determined on a case-by-case basis through the approval and authorisation process. For instance, **Zimbabwe**'s framework provides that the mitigation activity seeking to generate ITMOs should demonstrate high environmental integrity and compliance with given sustainable development criteria. For mitigation activities within the NDC, the CTC is mandated to decide on eligibility on a case-by-case basis after determining the impact of the activity on NDC achievement. On the other hand, **Fiji** does not explicitly address eligibility criteria in the law, but instead grants the Director of Climate Change the power to approve proposed mitigation activities on a case-to-case basis.

Where Article 6 is addressed through legislation, the frameworks tend to provide broad guidelines, with the expectation that more detailed criteria and processes would be determined through subsidiary legislation. For example, Fiji's Climate Change Act tasks the relevant Minister to make regulations on eligibility criteria, authorisation, and approval processes.

Some strategies are more targeted to control authorisation and avoid the overselling of ITMOs. *Abatement costs* help evaluate the economic efficiency of different mitigation options by comparing the expenses involved in reducing emissions for each approach. Setting an abatement cost threshold means that any activity above the threshold is deemed eligible. For instance, **Indonesia** is taking abatement costs (emissions reductions costs in the sector involved) into account when determining if the transfer of mitigation approaches generated through cooperative approaches can take place.[16]

By setting *baselines based on NDC targets*, the host country would permit only those mitigation actions that exceed the country's NDC targets. The NDC commitments are used as a reference point (baseline), and any mitigation efforts surpassing this baseline would be deemed eligible for collaboration under Article 6 (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) 2021). No country that was analysed is currently considering this.

The easiest approach to control the international transfer of mitigation outcomes is by *setting a limit for the transferable number of outcomes* generated by the activity. **Jordan** considers this approach in its draft policy framework for cooperative approaches under Article 6.[17]

Limiting crediting periods of activities can also reduce the risk of overselling. If crediting periods are longer than the frequency of NDC updates, the increased ambition of the subsequent NDC coupled with the international transfer of mitigation outcomes may impact the achievement of the NDC. Using *conservative baselines* also reduces the amount of mitigation outcomes that are being generated, and the difference with the mitigation achieved can be used by the host country to meet its NDC (GIZ 2021). These approaches are currently not envisioned by any country that was analysed.

Finally, making authorisation for transfer *conditional to meeting (or being on track to meet) NDC targets* is another option to control ITMO. This is a particularly stringent criterium, but it ensures that the overselling risk is minimised. No transfers are authorised until the country has met its (sectoral) NDC targets. In Indonesia, for example, international carbon trading is allowed only if

[16] See Regulation No. 21 of 2022 on procedure for implementation of carbon pricing, available at: *https://jdih.menlhk.go.id/new/uploads/files/english/english_version_jdih-KLHK_1131-21-2022.pdf* (accessed 3 October 2023).

[17] See Jordan's draft policy framework for cooperative approaches under Article 6 and other international carbon markets at: *https://www.moenv.gov.jo/ebv4.0/root_storage/en/eb_list_page/jordan_a6_policy_framework_draft.pdf* (accessed 3 October 2023).

the relevant NDC target for the sub-sector or sub-sub sector has been met.[18] See Table 3 for a summary of eligibility approaches.

Eligibility approach	Countries
Positive list (or "green" list)	Ghana, India, Jordan (considered)
Negative list (or "red" list)	Ghana, Jordan (considered)
Abatement cost	Indonesia
Baselines based on NDC targets	No documented use (yet)
Sustainable development	Ghana, Indonesia, Jordan
Limiting transferred amounts	Jordan (considered), Ghana, Indonesia
Limiting crediting periods	No documented use (yet)
Conservative baselines	No documented use (yet)
Conditional to meeting (being on track to meet) NDC target	Indonesia

Table 3: Eligibility approaches

Source: partly based on GIZ (2021). Country analysis by authors.

In terms of authorising procedures, the frameworks – particularly the more detailed ones like subsidiary legislation and administrative frameworks – provide clear processes for developing and authorising Article 6 activities. A case study of Ghana's activity development and authorisation process illustrates this (Figure 5).

Case study

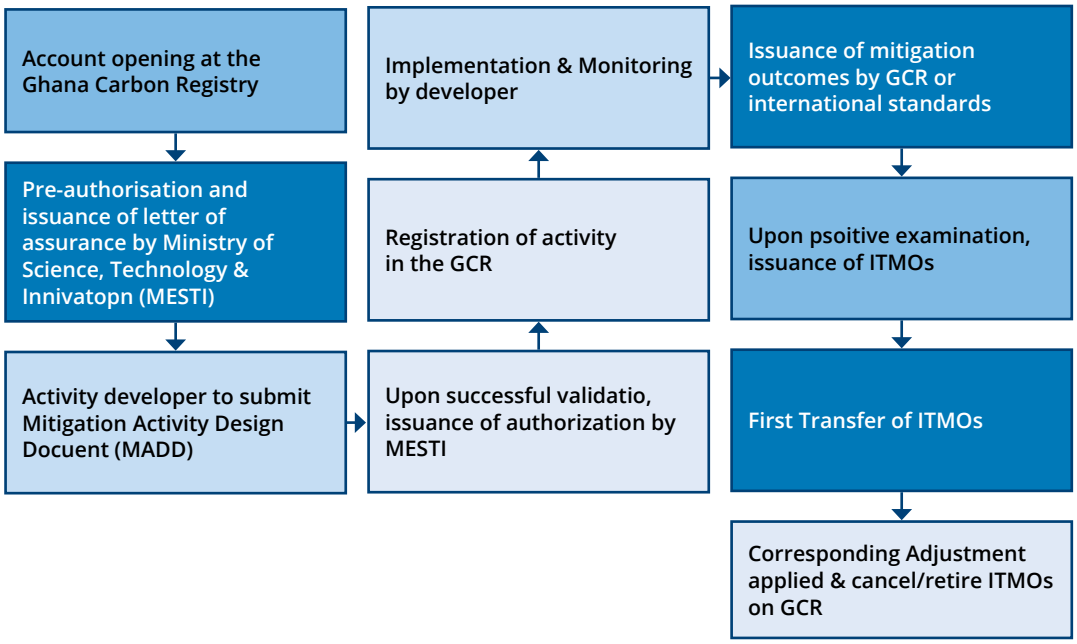


Figure 5: Processes under Ghana's Framework

[18] See Regulation No. 21 of 2022 on procedure for implementation of carbon pricing, available at: *https://jdih.menlhk.go.id/new/uploads/files/english/english_version_jdih-KLHK_1131-21-2022.pdf* (accessed 3 October 2023).

3.2 BENEFIT SHARING: STRIKING A BALANCE BETWEEN NATIONAL INTERESTS AND INCENTIVES FOR INVESTORS

Benefit sharing refers to the distribution of resources resulting from carbon market operations to different beneficiaries for various purposes. Benefit sharing may include in-kind fees (for technical or Overall Mitigation of Global Emissions (OMGE)-related reasons) and monetary fees, aimed at covering administrative costs and funding sustainable development activities.

Establishing a benefit sharing structure is a delicate balancing act. On one hand, host countries must ensure that they cover both administrative costs and (more than) the cost transferring the ITMOs and set up a sharing framework for carbon revenues. On the other hand, host countries must be careful not to overburden project developers with fees and taxes to create a hostile business environment that is unconducive to carbon investments. As of October 2023, **Ghana** and **Tanzania** set a fee structure (not covering Article 6 specifically). In addition to the fee structure, Tanzania also included a taxation component. Zimbabwe set a taxation structure.

Importantly, if the project is registered under the Article 6.4 mechanism, all fees set by the host country must be considered on top of the OMGE and Share of Proceeds for administration and adaptation.[19]

In-kind fees

As a starting point, a host country can charge a fee a share of issued units to create a national buffer to protect against overselling. This is the case in Ghana, for example, which retains 1% of issued units. Indonesia's carbon trading regulation sets a similar requirement; the regulation states that before the transfer of outcomes takes place, the national buffer should be considered.

National authorities may also want to impose a fee for OMGE. In this case, a part of the issued units is cancelled for the benefit of global mitigation. The only current instance of this is in the Ghanaian carbon market framework under Article 6.2 cooperative approaches, where an OMGE fee shall be predetermined with the acquiring Party.

Monetary fees and taxation

These fees may be designed to vary depending on the size of the project (Tanzania and Ghana); a percentage of total revenues or share of proceeds (taxation models; Tanzania and Zimbabwe); or a fixed amount per (authorised) unit (Ghana). There are two main purposes of monetary fees and taxation:

- Covering administrative costs. The administration and management of national carbon market activities should be fully covered. This finance is generated by fees obtained through various administrative steps and/or by annual admin fees. Ghana, for example, established an extensive list of fees at several stages of administrative procedures (see Table 4).
- Funding for sustainable development activities. Part of the revenues generated by selling units or by charging fees could be committed to an ad-hoc climate fund or entity and earmarked for specific activities. This is the case in Tanzania, where a significant share of revenues is directed to local communities or other government entities (see Table 5). In the case of Zimbabwe, provisions regarding benefit sharing are to be contained in the project agreement. In a different approach, Ghana has set up a Mitigation Ambition Fund to support

[19] These levies are mandatory under the Article 6.4 mechanism. Under Article 6.2, participating parties and entities are strongly encouraged to make adaptation and OMGE contributions.

additional mitigation actions outside the NDC. Regarding adaptation, a part of (fee) revenues could be reserved for funding adaptation activities. Once again, Ghana's framework is the only current example, where the share of reserved revenues shall be pre-determined with the acquiring Party under Article 6.2 cooperative approaches.

See Figure 6 for an illustrative example of a benefit sharing structure.

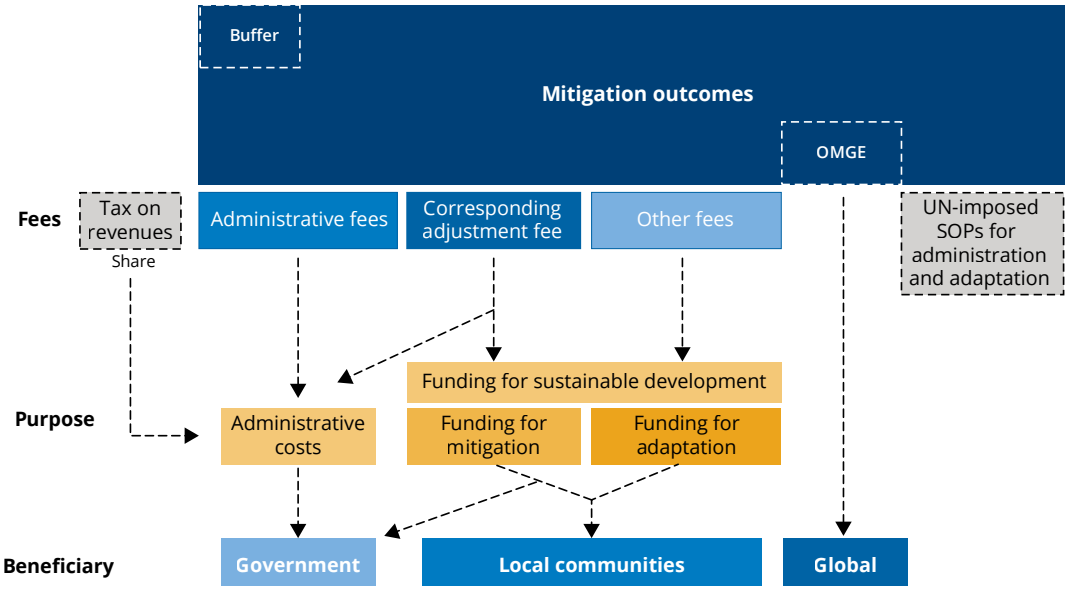


Figure 6: Illustrative example of a benefit sharing structure

Type of fee	Specifics	Allocation
Administrative fees	Mitigation Activity Participant Application Fee, Mitigation Activity Identification Fee, Unique Identification Number Fee, Administrative Fees for participation under Article 6.4 mechanism	To cover administrative costs
Corresponding adjustment fee	3-5 USD/ITMO	10% to cover administrative costs
		90% to a Mitigation Ambition Fund to support additional mitigation actions outside the NDC
Listing fee	0.01-0.2 USD/ITMO	To cover administrative costs
OMGE	Pre-determined with the acquiring Party	
Share of revenues for adaptation	Pre-determined with the acquiring Party	
Retention	1% of issued units	To national buffer

Table 4: Fee structure in Ghana

Type of fee	Amount charged
Application fee (non-citizen)	500 USD
Application fee (citizen)	250 USD
Project registration fee	1% of the expected CER from the project

Type of charge	Amount charged
Annual administrative charges	3% of the income accrued from sold CER
Annual project charges	5% of the income accrued from sold CER
Managing Authority	61% of gross revenues from sold CER
Designated National Authority	9% of gross revenues from sold CER

Table 5: Fee structure in Tanzania

4. OTHER ISSUES

4.1 REGULATING THE VCM AND REDD+

SUMMARY OF FINDINGS

- National Article 6 frameworks allow VCM projects to be developed alongside Article 6 activities. However, some frameworks are more restrictive than others in this regard.
- Some Article 6 frameworks include the option (rather than a requirement because rules are still under negotiation and countries are still uncertain) of authorisation and corresponding adjustment of VCM credits (in which case, the projects must be registered in a national registry). Other frameworks make this a requirement.
- None of the examined Article 6 frameworks define the intersection of Article 6 and REDD+ in detail.

4.1.1 VOLUNTARY CARBON MARKET AND ARTICLE 6: MOST FRAMEWORKS SEEK TO COVER VCM ACTIVITIES AND ARTICLE 6 UNDER ONE ROOF

Article 6.2 guidance and the implementing decisions do not directly regulate the VCM but provide guidance for accounting and reporting by Parties. They also do not compel host countries to apply corresponding adjustments to VCM credits. However, Article 6.2 gives host countries the option of authorising voluntary carbon credits for use towards other Parties' NDCs or other international mitigation purposes. If voluntary carbon credits are authorised and subsequently used in this way, host countries must then apply corresponding adjustments and comply with the reporting requirements of the Article 6.2 guidance.

Existing Article 6 frameworks demonstrate how host countries often develop a singular, comprehensive framework for carbon markets covering all aspects of Article 6.2 activities and the VCM. This can be observed in Zimbabwe's and Ghana's frameworks, for instance. Ghana's framework addresses both VCM and Article 6 activities and provides more details on how VCM project developers can request authorisation. Activities developed under independent standards must follow similar evaluation processes and are held to comparable standards as those developed under the Article 6.4 mechanism. While all activities can request authorisation under Article 6.2 and would require corresponding adjustments if approved, not all frameworks currently provide the same level of regulatory guidance for project developers.

Further, all host countries that choose to develop comprehensive carbon market frameworks require all VCM projects are registered in a national registry. Taking this a step further, Ghana goes on to require that all VCM projects apply for formal recognition from the CMO, and the project developer must inform the CMO of the intended use of the credits. It is not mandatory for credits from VCM projects to be authorised. However, a VCM project developer can apply for authorisation if they wish to request a corresponding adjustment.

Compared to frameworks by other countries, **Indonesia**'s framework is restrictive. Any international trade of credits – whether related to the VCM or not – needs the approval of the Minister of Environment and Forestry. This applies to all exports of carbon credits, regardless of whether corresponding adjustments are applied. The foreign trade of VCM credits is allowed if it does not

affect the achievement of Indonesia's NDC target and meets the following conditions: (i) registration in the national registry; (ii) no transfer of units to other countries' NDCs; (ii) no claims on emission reductions from climate change mitigation actions; and (iv) not associated with the emission reduction target of foreign cooperation partners. Thus, foreign entities cannot claim any outcomes from VCM credits from Indonesia and cannot use these credits for their emission reduction targets. However, the rules on VCM require further elaboration. It is expected that the Minister of Environment and Forestry will issue a protocol for the VCM, which should provide more clarity.

Country	Corresponding Adjustment required on VCM activities	Restrictions on VCM development
Belize		Yes
Ghana	No	
India		Yes
Indonesia	Yes	Yes
Papua New Guinea		Yes

Table 6: VCM decisions taken by countries as of 2022

Source: The Nature Conservancy (2023)

4.1.2 REDD+ AND ARTICLE 6: STILL A BLACK BOX AND NOT YET COVERED BY FRAMEWORKS

Article 6 covers both emission reductions and removals; it is inclusive by design, meaning that no sector or technology is excluded ex ante. Therefore, carbon market activities promoting nature-based solutions (NbS) – including REDD+ activities and mitigation outcomes generated from REDD+ projects – can principally be submitted for authorisation and backed by corresponding adjustments under Article 6.2 cooperative approaches. Whether these credits are eligible under the Article 6.4 mechanism depends on the decisions of the Article 6.4 Supervisory Body regarding general eligibility, as well as the approval of specific baseline and monitoring methodologies.

Article 6 provides host countries with more decision-making power over the international transfers of mitigation outcomes and Article 6.2 establishes guidelines surrounding cooperative approaches on a voluntary basis. Because of these provisions, host countries always retain the right to decide whether to participate in REDD+ activities under Article 6.2.

As with any other Article 6.2 activity, countries also determine the volume of ITMOs (which could be a fraction of the total volume) and the conditions for their authorisation. Theoretically, host countries could build on existing VCM standards and methodologies. That said, it must be stressed that some of the methodologies used by these standards and related activity types have been subject to severe criticism by researchers, the media, and NGOs.[20]

None of the assessed countries have developed a more detailed strategy on the treatment of REDD+ vis à vis Article 6. The lack of specificity on REDD+ may be attributed to the level of complexity associated with Article 6 and removals, which is an area where host countries still require additional guidance.

[20]See for example Action needed to make carbon offsets from tropical forest conservation work for climate change mitigation (*available here*) and Overstated carbon emission reductions from voluntary REDD+ projects in the Brazilian Amazon (*available here*).

4.2 REGULATING THE CDM TRANSITION

The transition of CDM activities to the Article 6.4 mechanism remains an overlooked area. While project participants of eligible activities are expected to submit a request for transition by the end of 2023, countries have until 2025 to decide whether to approve it. As of mid-2023, no countries have communicated relevant procedures or criteria for the approval of the transition request. This regulatory gap leaves hundreds of CDM Project Activities (CDM-Pas) and Programmes of Activities (PoAs) in an uncertain situation.

4.3 INFRASTRUCTURE, ACCOUNTING, AND REPORTING

SUMMARY OF FINDINGS

- Countries are slowly establishing infrastructure for international carbon markets, mostly by relying on pre-existing assets.
- Of the few host countries that have adopted accounting approaches, most will use an averaging approach.
- Even though Article 6 implementation is well under way, only one country has met reporting requirements so far.

4.3.1 SLOW-MOVING ESTABLISHMENT OF CARBON INFRASTRUCTURE AND MEETING REPORTING REQUIREMENTS

Access to a registry is a prerequisite for participation in Article 6 and its implementation by the host country. Registries are needed for tracking mitigation outcomes and for fulfilling the reporting requirements of Article 6.

There are several types of registries that can support transactions under Article 6: An ad-hoc registry for a cooperative approach ("cooperative approach registry")

- A national (or regional) registry
- A third-party registry, usually of a private international carbon market programme
- The international registry under Article 6.2
- The Article 6.4 mechanism registry.

The latter two types of registries (the international registry under Article 6.2 and the Article 6.4 mechanism registry) are still under development. They will be operational and usable as an interim solution within the next two years. The Secretariat expects to make available a minimum viable product of the mechanism registry in late 2024 (UNFCCC 2023). The establishment of a cooperative approach registry is under development. So far, most countries intend to rely on a national registry; seven out of the eight host countries with existing frameworks establish national registries.[21] As a result, they require all mitigation activities

[21] Examples are: Ghana Carbon Registry, established under Schedule 8 of Ghana's carbon markets framework; Fiji's National Registry, established under Section 61 of Fiji's Climate Change Act; Zimbabwe's National Carbon Registry, under Clause 4.2 of Zimbabwe's Carbon Credit Framework; Indonesia's National Registry System for Climate Change, under Article 1 of Presidential Regulation 98 of 2021; Thailand's Carbon Credit Registry, established by Carbon Credit Management Guideline and Mechanism; and Kenya's National Carbon Registry, under Section 23G of Kenya's Climate Change Act.

in the country – whether for Article 6.2, 6.4 or voluntary purposes – to be registered in the national registry.

Host countries are striving to minimise costs by relying on pre-existing infrastructure for MRV purposes or, when that is not possible, by setting up new systems for national emissions trading with the help of capacity building initiatives. Table 7 provides an overview of current approaches. Some countries already have a national carbon registry or take advantage of pre-existing carbon infrastructure. Others have established new infrastructure, including **Ghana, Tanzania, and Vanuatu**. Additionally, countries engaged with the JCM will rely on the online registry system managed by the Government of Japan.[22] Countries engaging in transactions with Switzerland or with the Klik Foundation for Climate Protection and Carbon Offset are required to affect the transaction in the Swiss Emissions Trading Registry.[23] Finally, Nepal is considering the use of third-party infrastructure (Gold Standard and Adelphi 2023). Independent standards are updating their registry infrastructure to make sure that Article 6 transactions can be properly tracked (Gold Standard 2022; Verra 2023).

Country	Registry
Colombia	*RENARE*
Costa Rica	*SINAMECC*
Ghana	*Ghana Carbon Registry*
Indonesia	*SRN*
Peru	*RENAMI*
Tanzania	*National Carbon Monitoring Centre – Carbon Registry*
Thailand	*Thailand Carbon Credit Registry*
Vanuatu	*[under development]*

Table 7: Countries with a national carbon credit registry accessible online (VCM/ REDD+ and Article 6)

In this Article 6 readiness area, the Digital for Climate initiative of the UNDP also provides a solution as a Digital Public Good for countries looking to set up their own registry.[24] This open-source registry was developed based on an early example co-developed by the government of Vanuatu and the UNDP.

Working as part of the Digital for Climate initiative, the World Bank has developed two open-source carbon registries: the Core Registry and the Enhanced Registry. The Core Registry provides basic manual functionalities. The Enhanced Registry, which was co-developed with the

Tanzania's Carbon Trading Regulation appoints a Registrar who is required to maintain a register of carbon projects.

[22]The JCM registry is available at: *https://www.jcmregistry.go.jp/* (accessed 3 October 2023).

[23]The Swiss Emissions Trading Registry is available at: *https://www.emissionsregistry.admin.ch/crweb/public/welcome.action;jsessionid=6EQjWKetxZ902QgpwNZMrn9BJRtlB0EnYLTrDbvb.s021000106942a?token=* (accessed 6 October 2023).

[24]The National Carbon Credit Registry (Digital Public Goods Alliance) is available at: *https://app.digitalpublicgoods.net/a/10403* (accessed 3 October 2023). Relevant documentation on technical details is available at: *https://github.com/undp/carbon-registry/tree/main#about* (accessed 3 October 2023).

government of Jordan, allows for tracking workflows, managing project types and methodologies, and creating reports. The Enhanced Registry can also be linked with the MRV system for the automatic pulling of information.[25]

As of October 2023, there have been no developments surrounding registry interoperability or connections between registries (e.g., between multiple national registries or between national registries and third-party registries).

4.3.2 ACCOUNTING APPROACHES: COUNTRIES OPT FOR THE AVERAGING APPROACH

According to the PA Rulebook agreed at COP26, Parties must apply corresponding adjustments to avoid double counting. They are free to use one of two accounting approaches. However, once Parties select an accounting approach, they must adopt it for the whole NDC implementation period. Of the countries analysed, Jordan will use a multi-year accounting approach,[26] while Zimbabwe, Ghana, and Thailand will use an averaging accounting approach (Global Green Growth Institute (GGGI) 2023b).[27]

4.3.3 LOTS OF ACTION ON THE GROUND, BUT LITTLE OFFICIAL REPORTING

As of October 2023, the only countries to have submitted an initial report on their Article 6.2 cooperative approaches to the UNFCCC are **Switzerland, Ghana, and Vanuatu**. Notably, Ghana's and Vanuatu's initial reports both contain information of the cooperative approaches with Switzerland.

[25]See the Climate Warehouse for further details, available at: *https://www.theclimatewarehouse.org/work/digital-4-climate* (accessed 3 October 2023).

[26]Establishing a multi-year emissions trajectory for the NDC implementation period and then counting the transferred ITMOs against this trajectory for every year.

[27]Calculating the average yearly amount of transferred ITMO during the NDC implementation period (e.g. 2021-20230), and subsequently applying this average figure to the documented emissions in the specific target year (e.g. 2030).

4.4 ARTICLE 6 READINESS SUPPORT INITIATIVES

SUMMARY OF FINDINGS

- Article 6 implementation requires significant capacities. Limited resources in host countries is a barrier that hinders their full engagement with Article 6.
- Currently, Article 6 support is concentrated in Asia and Africa, with Senegal being the target of the highest number of initiatives. Several initiatives are operating across multiple workstreams.
- Challenges include the lack of institutional coordination, the sustainability of capacity building, and a lack of political awareness. The scale of current capacity building activities globally does not seem to match the readiness gaps of host countries.

4.4.1 ARTICLE 6 CAPACITY BUILDING ONGOING, BUT CHALLENGES REMAIN

In a survey on Article 6 readiness conducted by the GGGI, 86% of respondents from 29 countries felt that various risks and capacity gaps could affect their participation and ambition when engaging with Article 6 (GGGI 2022). Respondents' top three concerns were a lack of clarity of the Article 6 Rulebook; a general lack of understanding of market dynamics; and environmental integrity (i.e., avoidance of double counting). The top priorities for Article 6 readiness identified by host country respondents were:

1. Putting in place legislation and regulations to engage with carbon markets
2. Capacity building/training for government stakeholders
3. Developing a national registry or tracking tool

Some survey participants expressed their preference for first developing national rules. Additionally, some showed a reluctance to engage in designing Article 6 pilot activities due to concerns about overselling and not meeting national climate targets. This suggests that, before Article 6 is fully implemented, it is essential to establish regulations and best practices in a manner that is tailored to countries' needs. While this endeavour will require significant effort, it will enable host countries to benefit from carbon markets while meeting all PA provisions on transparency and reporting.

Numerous initiatives were launched to address these gaps, leading to a crowded landscape. This section includes numerous examples of capacity building initiatives; however, it is important to note that it presents only a current snapshot of a dynamic, changing landscape of actors and initiatives.

The **A6IP**, convened by the Japanese Ministry of Environment and launched in 2022, published a comprehensive overview of Article 6 capacity building initiatives. The census, conducted via survey between May and September 2022, revealed a total of 39 actors engaged in Article 6 capacity building across United Nations (UN) agencies, MDBs, countries, regional initiatives, and other organisations. These actors are often involved in more than one type of capacity building, including Article 6 participation (i.e., authorisation and recording), Article 6 reporting, and Article 6 project development and implementation (Paris Agreement Article 6 Implementation Partnership, 2022a). For example, the NDC Partnership, launched by the German Federal Ministry for

Category	Selected actor	Workstreams, initiatives and activities
UN agencies	UNDP	Multiple workstreams under Carbon Payments for Development (C4PD): • ITMOs for Development (Platform for Voluntary Bilateral Cooperation) • Article 6 Transfer Readiness Project **Selected outputs:** • UNDP Article 6.2 course • Implementing Article 6 – An overview of preparations in selected countries
Multilateral Development Banks	THE WORLD BANK	Multiple workstreams and initiatives (in cooperation with other actors): • Invest4Climate • Climate Market Club • Partnership for Market Implementation • Carbon Initiative for Development • Forest Carbon Partnership Facility • BioCarbon Fund Initiative for Sustainable Landscapes • Transformative Carbon Asset Facility • Climate Warehouse (including Digital For Climate)
Countries	Japan	Various initiatives led by Japan's Ministry of Environment, also in the context of the Joint Crediting Mechanism, including: • Mutual Learning Program for Enhanced Transparency • Seminars, side events, and workshops on Article 6 and MRV procedures • Development of a baseline review tool of Article 6.4 mechanism methodologies
	USA	Activities are in adaptation finance through carbon markets which include: • Introducing a jurisdictional approach, in the forestry sector to prevent emissions leakage. • Enabling participating jurisdictions to secure upfront commitments for the purchase of verified emission reductions
Regional initiatives	West Africa Alliance On Carbon Markets And Climate Finance Eastern Africa Alliance On Carbon Markets And Climate Finance	Multiple workstreams: • Encourage the engagement of delegates in the UNFCCC discussions regarding market mechanisms, transparency, and climate finance • Facilitate the access to national and sub-regional opportunities related to market mechanisms and climate finance • Promoting CDM transition • Provide assistance for pilot experiences of Article 6 in the sub-region. **Selected outputs** • Blueprint for Article 6 Readiness in member countries of the West African Alliance • Regional carbon market profiles (East Africa)
	AFRICA CARBON MARKETS Initiative	ACMI has four main objectives: • Increase African credit retirements to 300 $MtCO_2e$ annually by 2030 and 1.5-2.5 $GtCO_2e$ by 2050. • Generate or support 30 million jobs by 2030 and over 100 million jobs by 2050 through carbon project development, execution, certification, and monitoring. • Raise up to 6 billion USD by 2030 and more than 100 billion USD per year by 2050 to enhance the quality and credibility of African credits. • Ensure fair and transparent sharing of carbon credit revenue, especially focusing on revenue distribution to local communities. **Selected outputs** • 13 Action programs
Inter governmental Organisations (IGOs)	GGGI	Multiple workstreams and initiatives: • Supporting Preparedness for Article 6 Cooperation (SPAR6C) • Mobilising Article 6 Trading Structures • Designing Article 6 Policy Approaches • Carbon Transaction Platform **Selected outputs** • Developing Carbon Markets based on Article 6 of the Paris Agreement: Challenges and Opportunities

Table 8: Overview of Article 6 capacity building actors and their activities

Source: GCF (2021c)

- Article 6 institutional framework (governance)
- Article 6 strategy
- Article 6 infrastructure (accounting and MRV – measuring, reporting, and verification)
- Article 6 project development (assistance)

Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) in cooperation with other partners, incorporates multiple support mechanisms related to sustainable development and NDC achievement, including technical advisory projects on Article 6 capacity building in authorisation procedures, governance structures, policy guidelines and MRV frameworks. Furthermore, the Africa Carbon Markets Initiative (ACMI), aimed at generating African carbon credits, and the Energy Transition Accelerator (ETA) that seeks to mobilise private investment to expedite the shift to clean energy and phase out fossil fuel assets, were launched during COP27 (more details under Greiner et al., 2023).

Selected actors and their initiatives are summarised in Table 8 by providing one example for each category identified by the A6IP.

4.4.2 MOST ARTICLE 6 SUPPORT INITIATIVES ARE CONCENTRATED IN AFRICA AND ASIA

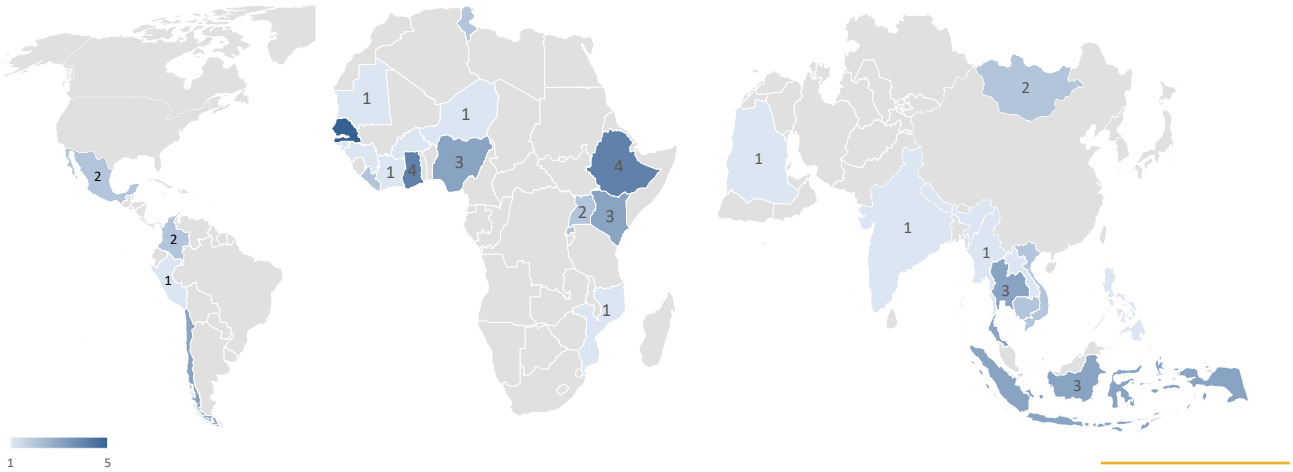


Figure 7: Number of capacity-building approaches per country

Source: based on Paris Agreement Article 6 Implementation Partnership (2022b)

Preparing and completing Article 6 transactions requires significant institutional, regulatory, and infrastructural capacities. The Article 6 rules set in Glasgow are complex, which is a major obstacle for host countries with limited resources. In the GGGI survey, 69% of countries indicated that their governments had received training or capacity building on Article 6. Still, all respondents believed they could benefit from additional knowledge.

According to A6IP data, Article 6 capacity-building support is currently concentrated in Asian and African countries (Figure 7). Of all countries covered by this data, Senegal receives the most support, having been the location of five capacity-building approaches, per 2022 data. Sub-Saharan Africa is at the forefront of Article 6 readiness, with several countries having already published their frameworks, and many others currently at the draft stage, with the support of multiple capacity building actors.

4.4.3 THE NEED FOR COORDINATION AND SCALING UP

Despite the array of capacity building initiatives that exist (see Table 9), countries continue to face significant challenges in preparing for Article 6 implementation. These challenges include a lack of inter-and intra-institutional coordination, the insufficient sustainability of capacity building efforts, and a lack of political awareness (Ahonen et al. 2022). Importantly, the continued expansion of capacity building initiatives may itself present additional challenges to Article 6

implementation. Coordination between capacity building efforts is spearheaded by different actors, potentially causing challenges for duplicative work or poor communication between initiatives. Further, these initiatives may not be adequately tailored to the needs of individual countries. Finally, while there are many organisations working on capacity building, the overall scale of capacity-building initiatives is still likely insufficient to accommodate the needs of all countries seeking engagement with Article 6.

Actor	Name of the project	Description of the activity
GGGI	Designing Article 6 policy approaches	Development of the Article 6 Strategy (GGGGI 2023a) Knowledge sharing; Capacity building
UNDP	Article 6.2 Transfer Readiness Assistance	Assessing capacity gaps and needs for ITMO transfer readiness (UNDP n.d.)
West Africa Alliance On Carbon Markets And Climate Finance	-	Capacity-building workshop series: Article 6 Policy, Stakeholders' Mapping, Institutional Framework, CDM transition, and Tracking, Accounting and Reporting
	-	CDM transition workplan
THE WORLD BANK	Partnership for Market Implementation	Development of the rules and procedures for the participation of Senegal in the international carbon market (Participation in Article 6.2, Article 6.4, Article 6.8, VCM, and development of a training plan) (World Bank 2023)

Article 6 institutional framework (governance)

Article 6 strategy

Article 6 training and knowledge sharing

Table 9: Case study capacity-building initiatives for Article 6 readiness in Senegal

Source: Authors

5. CONCLUSION

In sum, although Article 6 implementation is still in its formative stage, the variety of capacity building initiatives and the development of various frameworks, institutions and infrastructures are significant first steps towards successful host country engagement with international carbon market mechanisms under the Paris Agreement.

Despite many countries not yet having defined their Article 6 framework, a considerable number has made progress in allocating roles and responsibilities to key institutions. For instance, Zimbabwe and Ghana have defined extensive institutional arrangements in their Article 6 frameworks. Other countries in the process of developing their frameworks, such as Jordan, are also setting up institutional structures for Article 6. However, at the same time, many countries have neither identified responsible entities for Article 6.2 nor Article 6.4 yet. This suggests that most countries are at an early stage of their readiness for Article 6 implementation.

Domestic legal frameworks for Article 6 are still under development, with only a handful of host countries already having frameworks in place. Most of the frameworks address concepts applicable to carbon markets generally, with Article 6-related processes being one of the components. For instance, this may be observed in Fiji's, Zimbabwe's, and Zambia's frameworks. This underlines the importance of carbon markets in the consideration of countries, but also shows a holistic approach – a preference for covering different mechanisms in the drafting or amendment of existing climate change-related laws instead of establishing bite-sized regulations.

Different approaches are used by host countries to determine eligibility, but positive lists have so far been the most common approach. Host countries may choose from a range of eligibility approaches for activities, issuance, and authorisation, depending on their specific circumstances, NDC implementation plans, and sectoral targets. Host countries have so far used either one or a combination of two approaches: 1) a positive list of eligible activities or sectors for Article 6.2 cooperative approaches, and 2) a negative list for ineligible ones, the former being more common. However, the distinction between the eligibility of an activity for the issuance of credits on the one hand, and the eligibility of an activity for ITMO authorisation on the other, is somewhat arbitrary. Certain approaches can be applied interchangeably, fostering adaptability and efficiency in carbon market strategies. For instance, Ghana, Zambia, Thailand, India, Indonesia, and Zimbabwe define specific lists of activities, with Ghana and Indonesia adopting a mixed strategy.

When it comes to benefit sharing, countries currently find themselves in the difficult position of striking a balance between national interests and maintaining incentives for investors. Allocating resources from carbon market transactions gains increasing attention as countries need to have in place a structure that allows for an equitable distribution and use of benefits, while ensuring that a variety of climate change related priorities are addressed. Although work on defining benefit-sharing arrangements is still in preliminary stages, East African countries are active in putting forward various proposals, with Tanzania and Kenya taking notable initiative in defining benefit-sharing in their frameworks.

Current country frameworks also incorporate different approaches to defining types of fees, where countries currently either impose share of proceeds, fixed charges, or a flexible combination of both. Fee structures and ITMO pricing are a crucial component of an effective Article 6 strategy and underlying regulations. It is important that any regulation put in place

by countries follows a transparent and credible approach, while at the same time enabling host countries to cover costs and fairly benefit from Article 6 transactions.

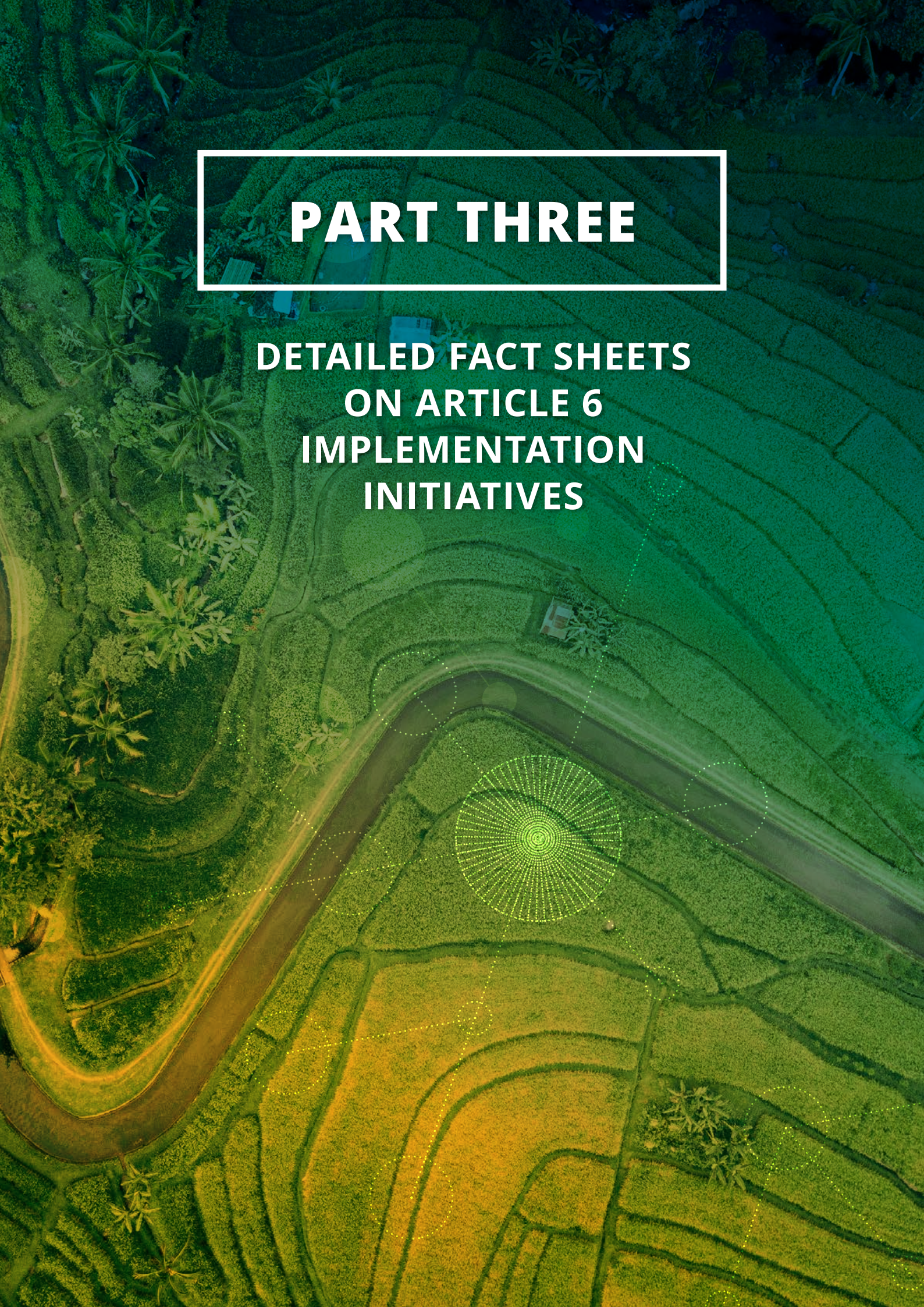
Existing Article 6 frameworks show a general trend that host countries are developing one single comprehensive framework for carbon markets that cover both VCM projects and Article 6 activities. Activities developed under independent VCM standards must follow similar evaluation processes and are held to comparable standards as those developed under the Article 6.4 mechanism. Article 6.2 offers guidance on accounting and reporting for any carbon market instrument. This means all activities can request authorisation for mitigation outcomes, which is subject to host country approval. Further, most frameworks require all VCM activities to be registered in a national registry, irrespective of whether they are authorised and requiring corresponding adjustments or not.

None of the analysed frameworks regulate the interplay between Article 6 and REDD+ directly, even though the importance of aligning both mechanisms is growing in the international carbon market discourse. It is evident that host countries lack guidance to put in place a regulation that addresses the coordination and interplay of Article 6 and REDD+ effectively. This also requires clearer guidelines and protocols at the international level to ensure that both potentials and synergies for climate mitigation can be harvested at national level.

Only one country (Ghana) has successfully met the stringent reporting requirements set forth in their framework. This underscores the challenges and complexities associated with the reporting aspect of Article 6 implementation, highlighting the need for enhanced reporting mechanisms and support to ensure comprehensive and accurate documentation of carbon market activities.

Article 6 implementation requires significant capacities, and several initiatives are operating across multiple workstreams to support host countries in the development of their Article 6 frameworks. Germany and Japan are key partners in both leading capacity building programmes and assisting other readiness support initiatives. Priority areas include putting in place regulations and legislation for engaging with carbon markets, capacity building and training for government stakeholders, and developing national registries and tracking tools. While numerous initiatives operate to enhance host country readiness, greater scale, and coordination, in addition to tailor-made approaches to national needs, are required to enable effective host country engagement with Article 6.

Overall, the analysis here confirms that the development of host country Article 6 frameworks is a dynamic field with significant host country engagement. National processes, supported by capacity building initiatives, are making significant steps towards further clarifying the Article 6 Rulebook, and towards fully operationalising Article 6 of the Paris Agreement.



PART THREE

DETAILED FACT SHEETS ON ARTICLE 6 IMPLEMENTATION INITIATIVES

TABLE OF CONTENTS

FACT SHEET 1

AFRICAN DEVELOPMENT BANK: THE ADAPTATION BENEFITS MECHANISM (ABM)

The Adaptation Benefits Mechanism (ABM) is a results-based finance mechanism aiming to attract both public and private sector funding for projects and programmes that enhance the ability of households, communities, economies, and ecosystems to adapt and build resilience against the adverse impacts of climate change. Developed since 2016 by the African Development Bank (AfDB) with a pilot phase running until 2025, the ABM falls under Article 6.8 as a non-market-based approach. The ABM generates "Certified Adaptation Benefits" (CABs), which provide verified and mostly quantified information regarding outcomes of adaptation activities. The ABM Pilot Phase endeavours to mobilise a minimum of $50 million in funding or register a minimum of 25 projects. In recent intergovernmental climate change negotiations under the UNFCCC, Kenya and Eswatini, together with Cote d'Ivoire and Uganda, assumed the role of ABM champions and cooperated in submitting a joint proposal (ABM n.d. a; AfDB 2023). In 2022, under the ABM, the first baseline and monitoring methodology was approved for cold storage of potatoes in East Africa. Currently, two further methodologies are under assessment by the ABM's Methodology Panel.

SUMMARY TABLE

Specific sectors and technologies	Any technology/sector where certified adaptation benefits (CABs) can be delivered and quantified. Requires design/availability of robust methodologies for the quantification and MRV of the CABs, which is currently the case for cooling of potatoes. Further submitted methodologies cover mobile flood barriers and improvement of cocoa plantation resilience.
Possible stakeholders and participants	Governments, Private investors, Parties to UNFCCC, non-governmental organisations, philanthropic organisations, and Multilateral Development Banks (MDBs).
Overall resources available (million USD)	USD $ 1 million, but aims to mobilise as much as $50 million by 2025
Type of Article 6 cooperation	Article 6.8 (non-market approaches)
Relationship with NDCs	Contribution to the achievement of the adaptation component of NDCs. Accounting of emission reductions contribution to be elaborated for projects with mitigation co-benefits.
Volume and price of ITMOs	No ITMOs will be generated since CABs will cover only the impacts of adaptation actions. The price of these units is based on the incremental project activity costs; thus, it varies depending on the technology/measure applied, sector and location of the activity implemented.
Sustainable development benefits	Based on the specific activity undertaken, the methodologies and project design documents should outline the improvements in community resilience in host countries and the contributions towards achieving the sustainable development goals.

KEY FACTS

The ABM represents a non-market approach to promote international cooperation on adaptation, involving global organisations, governments, the private sector, and civil society. It can be applied across various sectors relevant to adaptation, provided that the activities contribute to achieving the adaptation goals outlined in the host Party's NDC. Additionally, it requires the condition that these activities are considered additional, meaning they would not have been carried out in the chosen sector/country without the incentives provided by the ABM.

The ABM employs a rigorous approval process to verify and quantify the benefits of adaptation efforts, through dedicated baseline and monitoring methodologies. This information can be utilised for transparency purposes within the framework of the Paris Agreement and other reporting obligations, including mandatory annual reports on SDG implementation or various private sector reporting initiatives such as Corporate Social Responsibility Strategies (CSRs), the Global Compact, and the Global Reporting Initiative. The "Certified Adaptation Benefits" (CABs) generated by the ABM are assessed based on approved methodologies. Unlike carbon credits, CABs are not subject to price fluctuation or international trade. The contracts for results-based payments between data users and participants in ABM activities can serve as collateral for promoting fairness or obtaining commercial loans, making it possible to undertake adaptation actions that may not have been economically feasible otherwise (ABM n.d. b).

Between 2019 and 2025, the AfDB is piloting the ABM and aiming at the implementation of demonstration projects in Africa. To facilitate this effort, the AfDB is actively seeking additional funding from various climate funds and donors.

The primary responsibility of the AfDB is to secure the financial means and gather support for incorporating the ABM into the toolbox for implementing the Paris Agreement. The ABM Executive Committee's (EC) main responsibility lies in developing the ABM's rules, including guidelines on the ABM activity cycle, a glossary of terms, social and environmental safeguards, and a grievance mechanism. The ABM EC's methodology panel and roster of experts provide support in evaluating new ABM baseline and monitoring methodologies. The ABM constitutes a crucial part of the Innovative Financial Instruments Pillar within both the Africa Adaptation Acceleration Program (AAAP) of the AfDB and the Global Center on Adaptation. As part of the AAAP, the ABM serves as one of the financing mechanisms for adaptation projects and programs developed under the program's other pillars.

INTENDED FORM OF COOPERATION

The ABM represents an innovative approach to attract new and additional financial support from both the public and private sectors to bolster climate change adaptation efforts. By contributing to the establishment of a novel business model for adaptation, the ABM directly supports the fulfilment of global commitments and addresses specific needs of individual countries. Since the ABM operates under the Paris Agreement, it necessitates government approval. Governments of countries where an ABM project is located must indicate their consent to the project, acknowledging its contribution to adaptation within their country and ensuring that the projects are properly accounted for in national reports. The ABM's key aim is to facilitate private sector investment in adaptation by offering a mechanism to fund project developers for delivering adaptation benefits. This mechanism can also be utilised by governments and NGOs to access funds for implementing adaptation projects (ABM 2022).

TRANSACTIONAL SET-UP

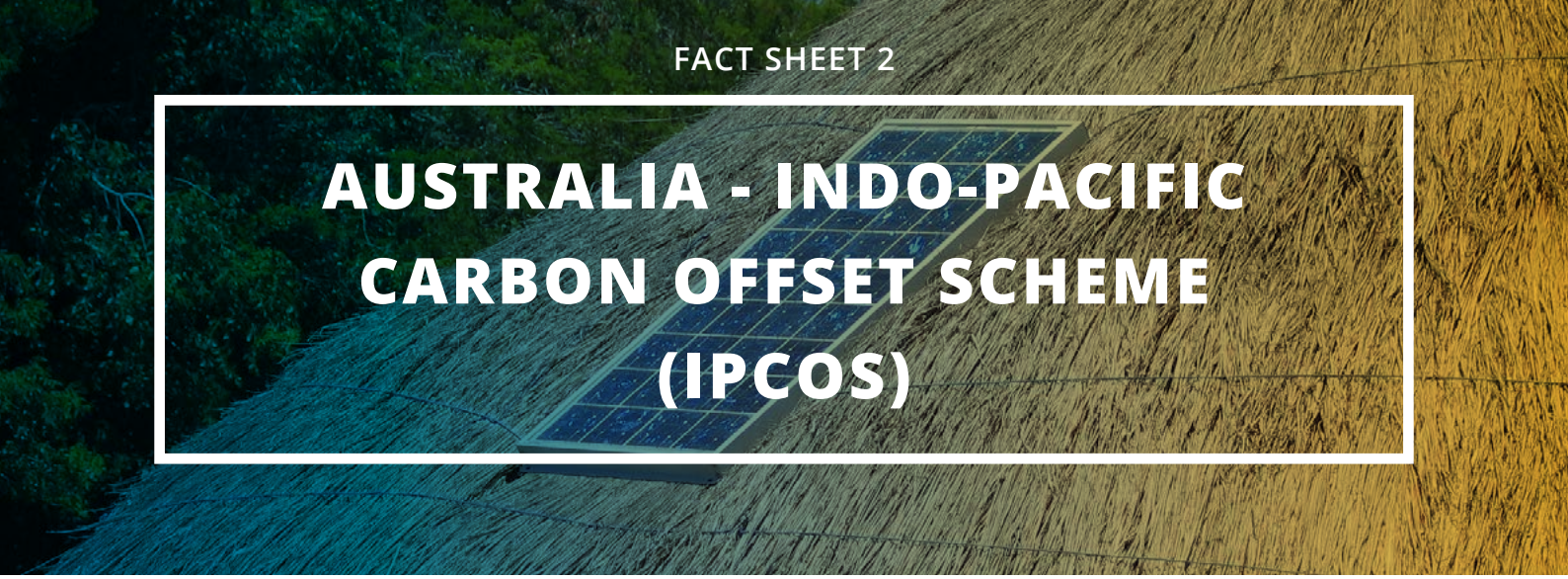
Adaptation benefits are not subject to trading. Instead, the ABM works by determining a project specific price to be paid for the CABs over a crediting period both specific to the determined project, such that the additional revenues overcome barriers to investment with minimum concessional finance. Depending on the type of project, alternative metrics to determine CABs can be employed, as soon as they have been approved by the ABM EC. The pricing of ABs is influenced by eligible implementation costs associated with each activity, as identified in the methodology. Additionally, a project-specific premium for developers affects the price. Consequently, the price varies based on the activity type, location, and how these factors influence implementation costs. Ideally, the Global Goal for Adaptation would lead country donors, private sector entities, and philanthropies to participate in "Positive adaptation commitments" or "Adopt an adaptation goal" through the ABM. This allows them to utilise approved adaptation methodologies for preparing project documents, which can then undergo validation and registration by the ABM EC. After registering their project and securing a supply agreement, project developers gain the opportunity to approach a "Green Bank" or access funds through a line of credit from development banks. These funds can then be utilised by developers to implement the project and carry out monitoring and reporting on inputs, outputs, outcomes, and impacts for verification purposes. The ABM EC issues CABs. Upon purchase, AB buyers will receive cancellation codes for the acquired ABs, ensuring that no further trading is possible through the ABM registry. Buyers pay for the CABs using these codes, and in turn, project developers use the received funds to repay their loans and potentially generate a modest return (AfDB 2022).

RELATIONSHIP WITH NDCs

The ABM can play a significant role in the implementation of the Global Goal for Adaptation and related adaptation goals under NDCs under the Paris Agreement, particularly in addressing the adaptation needs and priorities of developing countries which necessitate international cooperation and support. As adaptation is distinct from the targets and accounting units of the NDCs, it can be financed without affecting - or being influenced by - host country policies and measures. ABM projects also offer mitigation co-benefits to host countries, aiding them in increasing their ambition to combat climate change. Obtaining a Letter of Approval from the host country will establish a direct connection between ABM activities and the host countries' NDCs, along with other pertinent climate policies and priorities. The ABM's focus is not on targeting mitigation activities. Since there will be no international transfer of mitigation outcomes there is no need for any corresponding adjustments.

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential (t CO_2e)	Technology
Promoting the use of mobile flood barriers to prevent damages caused by flooding.	Nigeria	Water Management	n.a.	n.a.	Innovative water-filled mobile flood barrier. SLAMDAM-technology
Potato storage using green cooling technology	Kenya	Agriculture	n.a.	n.a.	Green cooling
Local livelihoods resilience: enhancing the resilience of smallholder cocoa farmers - Cocoa Climate Resilience	Côte d'Ivoire	Agriculture	n.a.	n.a.	Sustainable climate smart agroforestry measures



FACT SHEET 2

AUSTRALIA - INDO-PACIFIC CARBON OFFSET SCHEME (IPCOS)

With draft principles released in 2021 at COP26, the Indo-Pacific Carbon Offset Scheme's aim is to build connections between Australia and Indo-Pacific countries for investment in high-integrity carbon offsetting projects (Commonwealth of Australia, Climate Change Authority 2022). Through bilateral agreements, the scheme is intended to help the Australian private sector reach its climate change mitigation targets while investing in local communities of host countries. The programme will be operational until 2031 (10 years) and funded with approximately USD 65 million. However, its start has been postponed due to concerns about the credibility of existing carbon market projects in some host countries (Department of Climate Change, Energy, the Environment and Water (DCCEEW n.d. a).

SUMMARY TABLE

Specific sectors and technologies	No sector or technology exemptions, to date focus on forestry in Papua New Guinea (PNG)
Possible stakeholders and participants	Australia's DCCEEW, established in 2022; PNG's Department of Prime Minister and National Executive Council; PNG's Climate Change and Development Authority (CCDA); PNG Department of Finance; other host party governments; private and not-for-profit organisations; carbon market standards; local communities; local landowner
Overall resources available (million USD)	USD 67 million (AUD 104 million) committed by the Australian government (Australian government 2022)
Type of Article 6 cooperation	Alignment with Article 6 explicitly stated for activities (Australian government 2022)
Relationship with NDCs	Contributes to achievement of NDCs for all parties involved, listed as one of Australia's emission reduction strategies (DCCEEW n.d. b).
Volume and price of ITMOs	Australian Carbon Credit Units (ACCUs) currently trading at USD 21 (Core Markets n.d.)
Sustainable development benefits	Alignment with Sustainable Development Goals (SDGs) listed as design principle for the scheme, little elaboration. Projects should endeavor to deliver co-benefits, which contribute to Sustainable Development Goals.

KEY FACTS

The region-wide programme aims to deepen connections with Australia's neighbouring countries to support their technical capacity in participating in Article 6 with the view to developing a region-wide carbon market. However, the scheme has so far only drafted guidelines on the progression of the programme and published the following design principles at the end of 2021:

- Transparent and inclusive governance
- Aligned with the Paris Agreement and SDGs
- Responsibility and cooperation amongst parties
- High-integrity units (DCCEEW 2021)

A first phase planned to focus on capacity building within partnership countries to allow the development of offset projects and the sale of units produced from such projects, while a certain percentage of credits generated were to be kept by the host country.

AT COP26, Fiji and PNG signed bilateral agreements with Australia, but little progress has been made since. In March 2022, PNG temporarily barred REDD+ project development due to the suspected exploitation of forests through misleading carbon credit project claims. A history of illegal logging practices and exploitation of local communities was made apparent when Carbon Market Watch flagged evidence issues around a REDD+ project set to be the second largest Verra project proposed for PNG (Crook 2022). The year-long ban was intended to allow the government sufficient time to produce robust regulations around carbon markets and the export of credits, preventing further fraudulent cases. However, corruption cases in PNG's carbon market administration slowed progress on this down. Only 18 months after announcing the ban, PNG finally posted its updated REDD+ guidelines in early August 2023. The guidelines are focused on ensuring transparent and fair benefit sharing for local communities and stakeholders that go beyond projects simply avoiding all harm to actively benefiting local beneficiaries. Project developers must submit a benefit-sharing plan with explicit detail on monetary and non-monetary benefits, including timelines for when such benefits will be delivered. A certificate of consent from local landowners and communities must also be acquired for the project to be submitted alongside the benefit-sharing plan for approval. Under the new regulations, PNG's Department of Prime Minister and National Executive Council will oversee REDD+ funding proposals while the Climate Change and Development Authority (CCDA) will oversee coordinating REDD+-related governmental action and monitoring project benefit sharing. The national Department of Finance will be responsible for approving government finance for REDD+ results-based payments. From these, 20% will go to the CCDA, 60% to local communities (through local companies/ land groups) and the remaining 20% is to be split between various levels of government. Under VCM conditions, the project developer will only be able to reap a maximum of 30% of the gross benefits of the project and annual public meetings with local stakeholders are expected (Tilly 2023).

INTENDED FORM OF COOPERATION

The scheme is comprised of multiple bilateral agreements. In early 2023, PNG and Australia agreed at the PNG-Australia Fourth Annual Leaders' Dialogue that ministers responsible for forestry would coordinate on strengthening the cooperation (Prime Minister of Australia and Prime Minister of Papua New Guinea 2023).

TRANSACTIONAL SET-UP

Yet to be determined.

Under the draft scheme design principles of 2021, emission reductions are to be real, measured, reported, and independently verified without advanced or retro-active crediting. Projects must not already be legally mandated and prove additionality. Any potential carbon leakage must be evaluated, addressed, closely monitored, and appropriate deductions applied. Units from the IPCOS will only be issued once and cannot be simultaneously sold to multiple parties to prevent any fraudulent activities. Project baselines should be realistic, credible, and conservative, with periodic updates and alignment with NDCs (DCCEEW 2021a).

RELATIONSHIP WITH NDCS

So far, among potential IPCOS member countries, only PNG has undertaken activities that allow one to assess the relationship to its NDC. PNG has NDC targets related to land and energy sectors with strategies focusing on conserving forests and enhancing renewables (Hemming and Venketasubramanian 2022).

ACTIVITIES

No activities have been implemented in the partner countries yet (Fiji and Papua New Guinea) as the scheme is currently in the capacity building phase. The Australian government has stated its willingness to support partner countries in creating their own national frameworks for carbon markets, enhancing their capabilities in carbon accounting and reporting, and developing a portfolio of projects aimed at carbon offsetting (DCCEEW 2021b).

FACT SHEET 3

CANADA'S INTERNATIONAL AGREEMENTS ON ENVIRONMENTAL COOPERATION: RECICLO ORGÁNICOS PROGRAMA

The Reciclo Orgánicos Programa started out as a collaborative effort between the Chilean and Canadian governments aimed at supporting Chile in fulfilling its NDC obligations under the Paris Agreement. It has recently expanded to a broader group of Latin American and Caribbean countries. Canada and Chile's history of more than 20 years of joint efforts in sustainability through the Environmental Cooperation Agreement led to the establishment of the Organic Recycling Program in 2017. The original Program's objective was to support Chile's commitment to reduce greenhouse gas (GHG) emissions from the waste sector in line with the "Global Methane Pledge" to reduce methane levels by at least 30% in 2030 from 2020 levels. The Program sought to achieve this by aiming to reduce the amount of organic waste sent to landfills, capturing gas emitted from landfills and processing organic matter separately through composting or anaerobic digestion to produce clean energy and natural fertiliser. The success of the Program during its 5-year timeframe (2017-2022) has paved the way for Canada to expand cooperation to various other country groups. In 2022, an initiative was launched to extend the original programme to six Latin American countries, and in 2023 will be extended further to include a handful of Caribbean Small Island Development States (SIDS) to form "Recycle Organics Latin America and the Caribbean" (CCAP 2023). Aside from the primary aim of the Program, its purpose is to also establish a robust monitoring, review, and verification mechanism to ensure effective implementation (Reciclo Orgánicos n.d. a)

SUMMARY TABLE

Specific sectors and technologies	Waste sector, organic waste; main technologies: composting, anaerobic digestion, landfill gas capture, energy
Possible stakeholders and participants	Ministry of Environment and Climate Change Canada; host country governments' ministries of environment; local municipalities, Center for Clean Air Policy (CCAP), ImplementaSur, Environment and Climate Change Canada (ECCC), The Global Methane Hub (GMH)
Overall resources available (million USD)	Total Reciclo Organicos programas: USD 8.3 million (CAD 11 million)
Type of Article 6 cooperation	Article 6 of the Paris Agreement. Exploring article 6.2
Relationship with NDCs	Contribution to the achievement of the NDC mitigation goals.
Volume and price of ITMOs	Not available
Sustainable development benefits	To minimise the disposal of organic waste in sanitary landfills by optimising waste management practices at the local level. The programme also offers online educational resources and conducting workshops to engage citizens and increase awareness.

KEY FACTS

Under Chile's and Canada's Environmental Cooperation Agreement, the Government of Canada aims to support Chile's implementation of its NDC. Canada has provided financial and technical aid to facilitate the adoption of innovative technologies and approaches to decrease methane emissions in the waste sector through the original "Programa Reciclo Orgánicos." This original Program was a joint effort between the Ministry of the Environment of Chile and the Ministry of the Environment and Climate Change of Canada. USD 5.1 million (CAD 7 million) were invested over a five-year period (2017 - 2022) with the aim of reducing emissions from the decomposition of organic matter in landfills. The Chilean Program has now been expanded to become the Organic Recycling Program in Latin America and the Caribbean covering Uruguay, Costa Rica, Mexico, the Dominican Republic, and Peru. Since March 2023, Belize, Saint Lucia, Guyana, and Grenada, aims to fight climate change by diminishing the amount of organic waste sent to landfills, capturing gas emissions from landfills, and managing organic matter separately through composting or anaerobic digestion. As a result, organic waste is transformed into clean energy and natural fertiliser (Ministerio del Medio Ambiente 2020, Reciclo Organicos LAC n.d. a).

The CCAP and its implementation partner ImplementaSur provides technical assistance to the projects while Environment and Climate Change Canada (ECCC) funds the project in collaboration with The Methane Hub.

The Program has four overarching objectives:

1. Technology deployment: Reduction of methane emissions through technology deployment in selected cities
2. Monitoring, reporting, and verification (MRV): Development of MRV methodologies and systems
3. Community engagement: Raising citizens' awareness regarding organic waste management and climate change through communication, education, and involvement, and
4. Capital leveraging and co-financing: Leveraging co-financing from public and private sector partners for the planned projects as well as creating the financial conditions to enable scaled-up implementation by engaging with international financial institutions and multilateral development banks.

Over 30 communities in Chile and more than 12 in other Latin American countries are now benefiting from direct or indirect assistance. This includes initiatives like source-separation of organic residues for composting or anaerobic digestion, as well as the utilisation of landfill gas for clean energy generation (Arcadis n.d.). The Program's strategic pillar involves supporting the creation of Monitoring, Reporting, and Verification Protocols (MRV) for Sanitary Landfills, Composting, and Anaerobic Digestion using a standardised methodology validated by national authorities and experts. Three MRV methodologies are under development, drawing on experience from the Clean Development Mechanism (CDM). Onsite smart metering and linking to digital technologies (e.g., blockchain) for innovative MRV solutions is being contemplated.

The Program is actively exploring the potential for ITMO transfers under Article 6 of the Paris Agreement. It is conceivable that any additional mitigation achieved beyond Chile's NDC commitment could be issued as ITMOs. However, the specific governance structure for ITMO generation has not been established yet, and Canada and Chile will clarify it at a later stage, considering

the evolving rules for Article 6. The initial steps involve creating a work plan to set up a bilateral agreement between both governments, which will define the rules for a collaborative approach under Article 6. Currently, this work plan is undergoing revision.

INTENDED FORM OF COOPERATION

According to the Canadian Ministry of Environment, the Reciclo Orgánicos Program has the intention to "explore considerations for bilateral discussions for mitigation transfers", so would figure under Article 6.2. Within this context, both Canada and newly signed partner countries are contemplating the possibility of piloting concrete activities.

TRANSACTIONAL SET-UP

With the progression of the Program's initial phase of implementation and deployment of technologies and capacity building, it aims to develop a potential ITMO pilot to signal to the private sector the effectiveness of carbon markets. Additionally, this initiative seeks to capitalise on existing opportunities and replicate the collaborative approach in other regions.

RELATIONSHIP WITH NDCs

The main goal of the Program is to assist countries in implementing their Nationally Determined Contributions (NDCs) in the waste sector. Reciclo Orgánicos aims to not only identify opportunities for capturing landfill gas from existing waste disposal sites but also to undertake projects that divert organic residues away from the municipal waste stream. These organic materials are then utilised in composting facilities or anaerobic digestion plants to produce compost and/or clean energy. The Program collaborates with multiple municipalities, where the Government of Canada is offering financial and technical support to establish waste treatment facilities, including composting, anaerobic digestion, or landfill gas capture, depending on the city's requirements. Additionally, community engagement efforts are being carried out to raise awareness among residents about the benefits of recovering and utilising organic waste resources.

A significant achievement of the original Reciclo Orgánicos Program was the assistance it offered in crafting Chile's National Organic Waste Strategy that was officially introduced in March 2021 and forms a crucial component of Chile's current NDC (Ministerio del Medio Ambiente 2022). In total, 15 composting plants, two bio-digestion initiatives and 5 gas capture initiatives were established with the expectation of reducing 9.5 million tons of CO_2 by 2040 (CCAP 2022).

ACTIVITIES

Activities include:

Country	City	Start date	Emission reduction potential (tCO_2e p.a.)	Technology
Chile	Villarrica	2022	18,929	Composting plant
Chile	Puerto Varas	2022	21,873	Composting plant
Chile	Castro	2022	16,154	Composting plant
Chile	Quellón	2022	16,154	Composting plant
Chile	Ancud	2022	16,154	Composting plant
Chile	Santa Juana	May 2018	14,022	Machinery
Chile	Talcahuano	2019	35,407	Machinery
Chile	Talca	2020 onwards	85,789	Machinery for largest composting plant
Chile	Rapa Nui		2,923	Composting plant
Chile	Independencia	2021	n.a.	Composting plant
Chile	Molina	2021	1,848	Composting plant
Chile	Ecoprial	2020	963,869	Waste to Energy
Chile	Popeta	2021	525,571	Landfill biogas capture
Chile	La Hormiga	2020	684,250	Landfill
Chile	Copiulemu	2019	860,209	Landfill biogas capture
Chile	Bioenergía Los Pinos	2020	2,361,127	Landfill biogas capture
Uruguay	Viña del Mar (Lajarilla landfill)		n.a.	Composting plant
Uruguay	Montevideo		n.a.	Landfill biogas capture
Uruguay	Rivera		n.a.	Home composting
Peru	Soriano		n.a.	Composting plant
Peru	Oxapampa		15,085	Composting plant
Mexico	San Martín de Tarapoto		48,15	Composting plant
Mexico	Central de Abastos		393,057	Biogestion
Costa Rica	Aipromades		24,975	Composting plant
Costa Rica	Cóbano		12,557	Composting plant
Costa Rica	Turrialba		39,458	Composting plant
Chile	Santa Cruz		956	Home composting
Chile	Lautaro		n.a.	Composting plant
Chile	Traigén		n.a.	Composting plant
Chile	San Nicolás		n.a.	Composting plant
Dominican Republic	Cobquecura		n.a.	Composting plant
Dominican Republic	Santa Domingo		n.a.	Composting plant
Dominican Republic	Santiago de Caballeros		13,163 tons of methane	Composting plant

FACT SHEET 4

THE GERMAN FEDERAL MINISTRY FOR ECONOMIC AFFAIRS AND CLIMATE ACTION (BMWK) – INTERNATIONAL CLIMATE INITIATIVE FUNDING FOR ARTICLE 6 CAPACITY BUILDING AND IMPLEMENTATION

To aid the implementation of Article 6, the German Federal Ministry for Economic Affairs and Climate Action has made considerable efforts in the last few years to establish a range of bi- and multilateral partnerships and schemes to work on practical project implementation as well as knowledge sharing with regards to best practices for carbon market approaches. Additionally, BMWK supports the enhancement and crafting of Article 6 by engaging in relevant research and allocates resources to real-world experimentation of innovative strategies through pilot initiatives (BMWK n.d. a). The International Climate Initiative (IKI) which has been a part of the BMWK since 2022 provides funding to countries furthering the ambition of NDCs stemming from the Paris Agreement. Two of IKI's four funding areas typically fund many Article 6 related projects.

SUMMARY TABLE

Specific sectors and technologies	There are no restrictions or limitations on any sector or technology if an approved baseline and monitoring methodology are in place. Ensure that progress is made in the international climate negotiations. BMWK also promotes the further development and design of the mechanisms by commissioning corresponding research and investing in practical testing of innovative approaches in the form of pilot projects (BMWK n.d. b).
Possible stakeholders and participants	German government, governments of host countries, private and public entities (project implementers), third party entities (BMWK n.d. b).
Overall resources available (million USD)	Range of funding available through various grants (e.g., thematic calls range between USD 5.4 to 21.7 million (€5 to 20 million), country specific USD 13 to 16.2 million (€12 to 15 million).
Type of Article 6 cooperation	Article 6.2, Article 6.4 - work on design options for Article 6.4 in general, Article 6.8 -work on upscaled crediting under Article 6 or ensuring a robust and environmentally sound CORSIA Offsetting Mechanism for use in International Aviation.
Relationship with NDCs	Help countries meet their nationally determined contributions (NDCs) (BMWK n.d. c).
Volume and price of ITMOs	N.A.
Sustainable development benefits	The schemes intend to address sustainable development at the same time as mitigating emissions.

KEY FACTS

Cooling Program for Southern Africa (CooPSA)

As cooling becomes increasingly important in the context of global warming, ensuring air conditioners (ACs) are energy efficient and use low carbon refrigerants is imperative to avoid a vicious cycle of emissions leading to global heating. In the South African Development Community (SADC), the use of ACs is set to increase threefold by 2030. Through the IKI, BMWK funds the Cooling Program for Southern Africa (CooPSA) that aims to help Southern African countries prepare for the implementation of greener AC diffusion programmes, including through the development of frameworks for piloting of market-based approaches for Article 6. The countries covered by the programme are Botswana, Eswatini, Namibia, and South Africa. Within these countries, stakeholders targeted will include policy makers, financial institutions, technology manufacturers, training institutions etc.

Within the programme, support will be provided for:

- finalising bilateral agreements for ITMO transfers
- the preparation of minimum energy performance standards (MEPS) and energy labels for ACs
- designing an AC replacement programme
- development of a sustainable financing instrument (Green Cooling Initiative n.d.)

Between 2021-2022 the programme ran a preparatory phase to begin implementation of projects in 2023. BMWK funds the programme and GIZ and GFA Consulting Group act as the implementing agencies. So far, funding of €7 million has been set aside for the programme running until the end of 2026. An analysis on current AC systems (e.g., regulatory status, energy efficiency) is underway, as well as some trainings on the safe use of refrigerants, with a study on the political, legal, and educational framework for the AC sector to be carried out (BMWK n.d. d). The inaugural regional workshop of the CooPSA project took place in September 2023 following the completion of national working group meetings across all four partner countries (Botswana, Eswatini, Namibia and South Africa). Initiated in early 2022, the CooPSA project is now transitioning from the design phase to the implementation stage (Green Cooling Initiative 2023).

GGGI and BMWK: IKI-SPAR6C Program

In June 2022, the GGGI and the BMWK signed a grant agreement of €20 million for the 5-year multi-country project "Supporting Preparedness for Article 6 Cooperation" (SPAR6C). The project plans to run until 2027 and is led by the GGGI, also including the UNEP Copenhagen Climate Centre and the GFA. It intends to enhance readiness of Colombia, Pakistan, Thailand, and Zambia to engage in carbon markets under Article 6. The project will provide support for governments regarding policy and regulatory framework creation, also involving the private sector and focusing on activities beyond the NDC. A range of national stakeholders will be involved in the discussion around fostering a landscape for greater carbon trading under just conditions, with an emphasis on youth engagement. Outside the national level, experts will form the "High Ambition Community of Practice" group, to provide best practice insights for engagement and facilitate practical knowledge sharing (GGGI 2022).

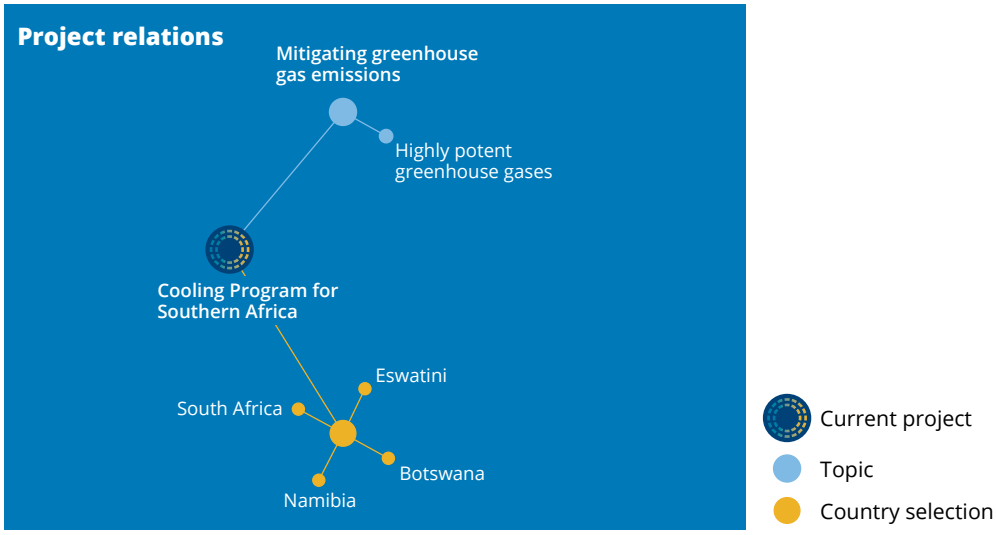


Figure 1: CooPS project relations

Source: IKI (2023)

Urban market approaches under Article 6 of the Paris Agreement – Recommendations for practical implementation

To address the surge of greenhouse gases emissions from rapid urbanisation in African countries, the BMWK commissioned a research project by Perspectives Climate Group (PCG) and ICLEI to conceptualise a framework for possible urban Article 6 projects in the African cities of Addis Ababa in Ethiopia and Kampala in Uganda. The study focused on developing concrete approaches for small-scale urban activities as well as organisational structures that involve key stakeholders and build on financial incentives from the sale of ITMOs (BMWK n.d. e). Published in 2023, the report identifies urban carbon market approaches including their mitigation potential and building on consultation with relevant stakeholders.

Climate Finance Innovators

Funded by IKI since 2018, CFI is a project co-organised by Perspectives Climate Group and Climate Focus, with inputs by AERA, aimed at linking carbon markets with climate finance in Africa. The project implemented in Ethiopia, Senegal and Uganda has demonstrated a clear commitment to climate-friendly development pathways and participated actively in relevant climate finance mechanisms and negotiations. The blending of climate finance and market mechanisms is explored to create replicable climate financing models for NDC realisation based on CDM activities. Working with public and private players, the project works on developing funding proposals to scale up mitigation activities while working on capacity development as well as building on lessons learned. The project produces various publications building on lessons learned and updated on the current state of Article 6 (CFI n.d.).

Early-Mover Programme

BMWK supported the Gold Standard in its Article 6 Early-Mover programme that aims to support and enable early authorisations of credits for use under Article 6 and provide information on the standard's eligibility criteria over the course of 2022. The programme provided help in the form of a dedicated helpdesk, enhanced practical support, webinars, and opportunities for peer-to-peer exchange (Gold Standard n.d.). There was also the development of a blueprint for engaging in cooperative approaches under Article 6.2 with the help of the consultancy Perspectives Climate Group. The guide acts as a comprehensive manual for every step in the process of setting up an Article 6 project including agreement negotiations, ITMO authorisation, reporting, and guidance etc. Studies produced by the programme include "Supporting authorisations under

article 6 of the Paris agreement" and "Implementing Article 6: An Overview of Preparations in Selected Countries".

Intended form of cooperation

BMWK's Article 6 strategy made up of various programmes is to garner knowledge on specific areas of climate mitigation relating to Article 6 engagement and implementation, and to disseminate this information internationally with strategic partners.

TRANSACTIONAL SET-UP

The BMWK provides a large amount of its funding through its International Climate Initiative (IKI) in the form of grants of varying size. IKI issues calls for proposals throughout the year for various funding types ranging from:

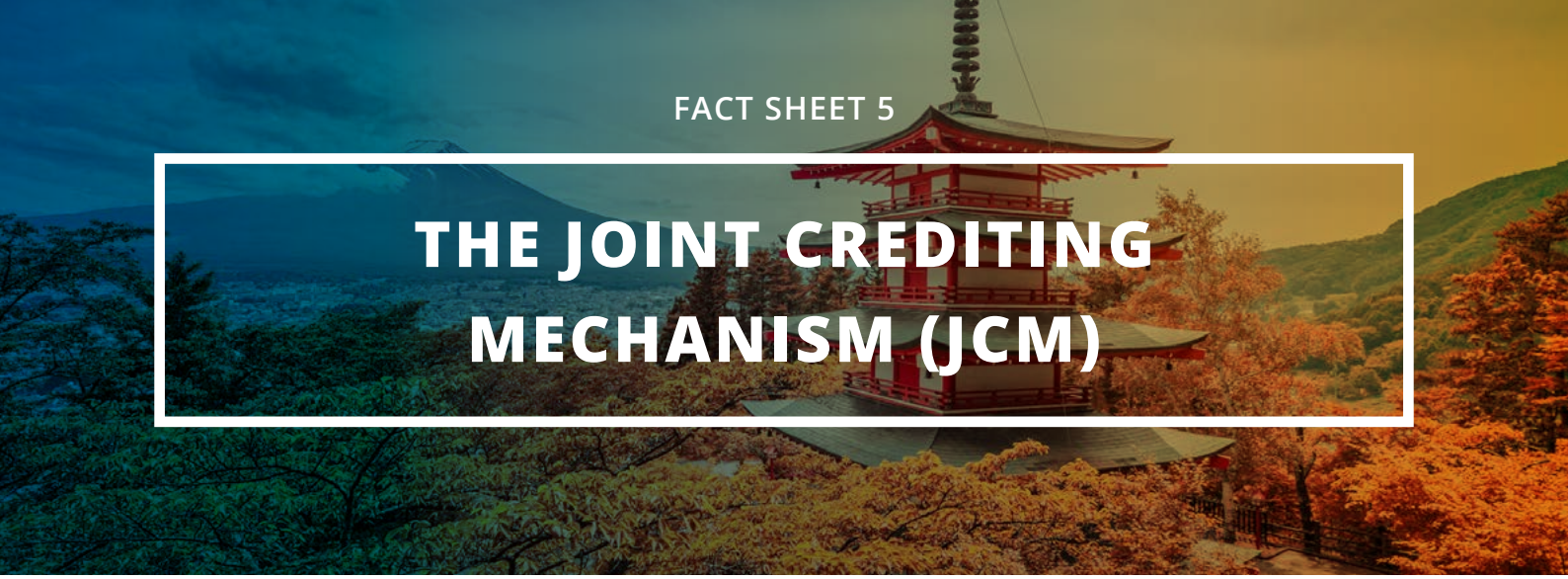
- Thematic calls (€5-20 million; available for organisations and/or companies in a consortium; issued annually)
- Country calls (€12-15 million; available for organisations and/or companies in a consortium; issued after bilateral coordination with the priority country)
- Medium grants (€300,000-€800,000; available for non-profits and organisations based in Germany; issued annually)
- Small grants (€60,000-€200,000; available for regional, national, local organisations in official development assistance (ODA) countries; issued annually) (IKI n.d.)

RELATIONSHIP WITH NDCs

The programmes funded by BMWK aim to raise ambition within host and partner countries to exceed mitigation outcomes beyond NDCs to support carbon market engagement and the subsequent mobilisation of climate finance.

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Cooling Program for Southern Africa (CoolPSA)	Botswana, Eswatini, Namibia, South Africa	Energy - Cooling	2021	n.a.	Energy efficiency - AC replacement programme
Supporting Preparedness for Article 6 Cooperation (SPAR6C)	Colombia, Pakistan, Thailand, Zambia	Various	2022	n.a.	Support governments to be better prepared for engaging in Article 6; Community of Practice
Climate and Ozone Protection Alliance for ODS and HFC Banks Management (COPA)	China, Ghana, Gambia, Tunisia, Grenada, Dominican Republic, Mexico, Ecuador	Various	2021	n.a.	Multiple
Urban market approaches under Article 6 of the Paris Agreement – Recommendations for practical implementation	Ethiopia, Uganda	Urbanisation	2021	n.a.	Multiple
CFI	Ethiopia, Senegal, Uganda	Finance	2018	n.a.	Linking Market Mechanisms and Climate Finance in Africa
Early-Mover Programme	Global	Finance	2021	n.a.	Support stakeholders in capacity building and knowledge sharing on applications of Article 6



FACT SHEET 5

THE JOINT CREDITING MECHANISM (JCM)

The Joint Crediting Mechanism (JCM) is one of the leading Article 6.2 implementation initiatives set up by the Japanese government in 2010 to promote decarbonisation and sustainable development of developing countries through cooperative mitigation efforts (Carbon Markets n.d. a). As of August 2023, the JCM has signed bilateral agreements with 27 partner countries, with the most recent MoUs being signed by Azerbaijan, Kyrgyzstan, Moldova, Papua New Guinea, Senegal, Sri Lanka, Tunisia, the United Arab Emirates and Uzbekistan (Ministry of Foreign Affairs 2023). Since the last edition in 2020, projects registered under the JCM have increased from 64 to 81. The JCM currently has 123 different approved baseline and monitoring methodologies (JCM n.d. a). In total, 40 issuances of credits have been made totalling approximately 0.127 million tCO_2e reductions (JCM n.d. b). The JCM aims to reach the goal of 100 million tCO_2 accumulated emissions reductions by the fiscal year 2030.

SUMMARY TABLE

Specific sectors and technologies	There are no sector or technology exemptions, an approved baseline and monitoring methodology must exist
Countries	Azerbaijan, Bangladesh, Cambodia, Chile, Costa Rica, Ethiopia, Georgia, Indonesia, Kenya, Kyrgyz Republic, Lao PDR, Maldives, Mexico, Moldova, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Saudi Arabia, Senegal, Sri Lanka, Thailand, Tunisia, United Arab Emirates, Uzbekistan, Viet Nam.
Possible stakeholders and participants	Government of Japan, governments of host countries, Joint Committees that govern the JCM implementation at bilateral level, private and public entities (project implementers), third party entities (CFI 2020)
Overall resources available (million USD)	Total budget (2013-2026) is USD 507 million (JPY 76 billion) (GoJ 2018; Kuo 2023a).[30]
Type of Article 6 cooperation	Article 6.2
Relationship with NDCs	Emissions reductions contribute to Japan and host countries' NDC targets with the application of corresponding adjustments to avoid double counting
Volume and price of ITMOs	0.127 million credits generated so far. Subsidy programmes under JCM provide costs of up to USD 36/tCO_2e, which means that ITMO prices would also lie in this order of magnitude (MOEJ 2021).
Sustainable development benefits	General guidelines on project eligibility with regards to alignment with SDGs, gender guidelines, and compliance with local laws in project countries on environmental protection (Global Environment Centre Foundation 2023)

[30] This takes into account the current exchange rates

KEY FACTS

The JCM was created to facilitate cooperative climate action between Japan and developing countries to produce emission-reduction activities that would subsequently contribute to the NDCs of both partners. In addition, as outlined in Japan's Overseas Development Strategy adopted in 2018, the scheme is intended to foster technological innovation and diffusion through the development of low-carbon technologies and infrastructure (MOEJ 2021). In return for a percentage of the JCM credits generated, Japan provides financial support to countries in developing advanced decarbonisation equipment and facilities.

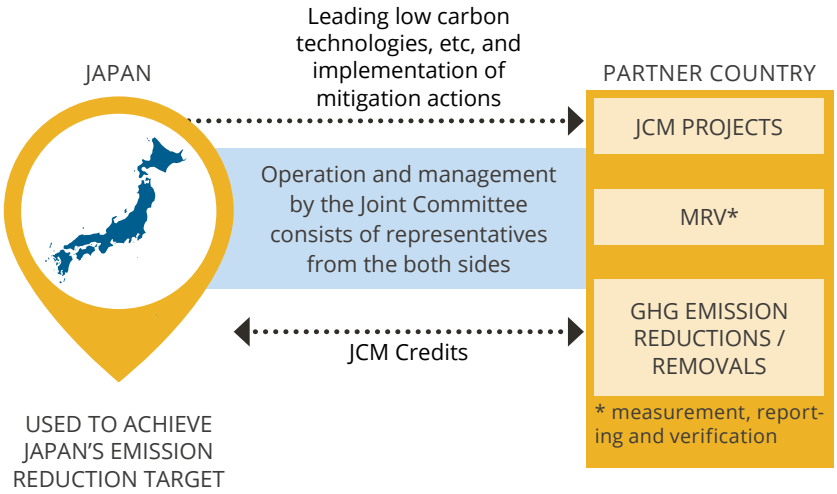


Figure 2: Basic concept of the JCM
Source: Government of Japan (2023)

The Japanese Ministry of the Environment (MOEJ) supports model projects and development/capacity building programmes through the form of subsidies, grants, and technical cooperation. Projects can have a size of up to USD 18.2 million USD (MOEJ 2021). The share of costs covered by the subsidy depends on the number of projects already registered in the host country – if no project has been registered, up to 50% of costs can be financed. If 1-3 registered projects exist, up to 40% can be financed and if more than 3 projects have been registered, up to 30% of projects are eligible (ibid.). Cost- of GHG emission reductions is expected to be below USD 36/tCO_2 (ibid.). If 5 or more projects using a similar technology are proposed in a partner country, the cost threshold is reduced to USD 27 /tCO_2 (ibid.). The threshold falls to USD 22 /tCO_2 if 10 or more projects using a similar technology are proposed in a partner country (ibid.). The Ministry of Economy, Trade, and Industry (METI) oversees feasibility studies, technical cooperation, and demonstration projects commissioned by the government that promote low-carbon technology dissemination. In addition, the Forestry Agency of Japan also plays a role in managing field studies for JCM REDD+ Programmes in host countries.

Implementation of JCM projects is first authorised through a signed bilateral agreement between the Japanese and the host party governments. The Joint Committee (JC) sends a confirmation of no objection to project participant-submitted project-idea notes (PINs) summarising the project outline and approves or rejects the project-specific methodologies. The JC also designates third-party entities (TPEs) for validation and verification within the project cycle and decides the volume of credits to be issued by each government. The process closely mirrors the former CDM project approval process.

To align with the Article 6 rulebook published at COP26, Japan intends to take the following actions to becoming a leading negotiator:

1. Expand JCM partner countries and strengthen project development and implementation in collaboration with international organisations
2. Scale up the JCM by mobilising further private finance
3. Contribute to the global operationalisation of market mechanisms (MOEJ 2022)

INTENDED FORM OF COOPERATION

JCM activities between Japan and a host country are managed by the JC, which has representatives from both partners to the agreement. The JCM's bilateral agreement structure fully aligns with that of Article 6.2 cooperation. At COP26, the Paris Agreement Article 6 Implementation Partnership (A6IP) was created by the Japanese Ministry of Environment (MOE) to boost institutional arrangements and knowledge sharing for Article 6 adoption. Through partnerships including with the UNFCCC secretariat, Japan aims to support the A6IP's 66 countries and 32 institutions with Article 6 capacity building (A6 Partnership n.d.).

TRANSACTIONAL SET-UP

So far, the JCM has been a non-tradable credit-based system with credits directly accruing to the governments, hence credits do not have a set price. Prior to the generation of credits, their allocation is decided upon by Japan and the partner country. Tracking and accounting for credits generated by JCM projects is possible either via the scheme's own registry system or national country registries. The avoidance of double counting is stressed in all JCM bilateral agreements where countries agree to not use credits generated under JCM projects for the purpose of other climate mitigation mechanisms.

To facilitate smooth coordination and easy communication between the variety of actors involved in JCM project implementation, e.g., technology providers, financers, the free platform of the 'JCM Global match' was created to support the match-making process (JCM – Global Match n.d.).

RELATIONSHIP WITH NDCs

The JCM is listed in Japan's NDC under "GHG emissions and removals" with the target of reducing 100million tCO_2e by 2030 through bilateral partnerships. The NDC cites the JCM's aim of promoting decarbonisation through the dissemination of low carbon technologies and improving resilience in developing countries (Government of Japan 2022). Mitigation outcomes from JCM projects will also count towards host party NDCs with the use of corresponding adjustments applied to ensure robust accounting.

ACTIVITIES

Registered JCM projects include:

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Introduction of photovoltaic (PV)-diesel Hybrid System at Fastening Manufacturing Plant	Bangladesh	EE, power generation	04-Apr-19	203	EE, solar PV/hybrid
Installation of High Efficiency Loom at Weaving Factory	Bangladesh	EE, power generation	04-Apr-19	382	EE
Installation of High Efficiency Centrifugal Chiller for Air Conditioning System in Clothing Tag Factory in Bangladesh	Bangladesh	EE, power generation	04-Apr-19	382	EE, Cooling
Prey Lang Wildlife Sanctuary - Stung Treng REDD+ project	Cambodia	Land	09-Jun-23	345,770	REDD+
Energy Saving by Inverters for Distribution Pumps in Water Treatment Plant	Cambodia	EE	09-Jun-23	413	EE
Introduction of High Efficiency LED Lighting Utilizing Wireless Network	Cambodia	EE	21-Feb-20	508	EE
Introduction of Ultra-lightweight Solar Panels for Power Generation at International School	Cambodia	Power generation	12-Mar-18	99	Solar PV/hybrid
3MW Solar Power Project in Chillan, Nuble Region	Chile	Power generation	08-Aug-22	2,318	Solar PV
Introduction of 1MW Rooftop Solar Power Systems to University	Chile	Power generation	08-Oct-19	500	Solar PV
5MW Solar Power Project in Belen	Costa Rica	Power generation	23-Feb-20	2,111	Solar PV
Installation of Solar Power System and Storage Battery to Commercial Facility	Indonesia	Power generation	17-Feb-21	260	Solar PV
Introduction of Absorption Chiller to Chemical Factory	Indonesia	EE	30-Mar-20	592	EE, Cooling

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Energy saving through introduction of Regenerative Burners for aluminum holding furnaces of the automotive components manufacture in the Republic of Indonesia	Indonesia	EE	30-Mar-20	78	EE
Introduction of High-efficiency Once-through Boiler in Film Factory	Indonesia	EE	31-Oct-19	738	EE
Introduction of High Efficiency Once-through Boiler in Golf Ball Factory	Indonesia	EE	03-Sep-19	131	EE
Introduction of High-Efficiency Looms in Weaving Mill	Indonesia	EE	03-Sep-19	376	EE, Cooling
Installation of gas engine cogeneration system to supply electricity and heat to the vehicle manufacturing factory of PT.	Indonesia	Power generation	09-May-19	19613	EE
1.6MW Solar PV Power Plant Project in Jakabaring Sport City	Indonesia	EE	07-Mar-19	899	EE
Introduction of 0.5MW Solar Power System to Aroma and Food Ingredients Factory	Indonesia	Power generation	07-Mar-19	369	Solar PV
Reducing GHG emission at textile factories by upgrading to air-saving loom	Indonesia	EE	24-Aug-18	742	EE
Installation of Tribrid System to mobile communication's Base Transceiver Stations in Republic of Indonesia	Indonesia	EE	10-Jul-18	359	EE
Energy saving by optimum operation at an oil refinery	Indonesia	EE	10-Jul-18	1275	EE
Power generation by waste heat recovery in the PT Semen Indonesia (Persero) Tbk factory in Tuban	Indonesia	Power generation	10-Jul-18	132500	Waste to energy
GHG emission reductions through utility facility operation optimisation system for refineries in the Republic of Indonesia	Indonesia	EE	10-Jul-18	20000	EE

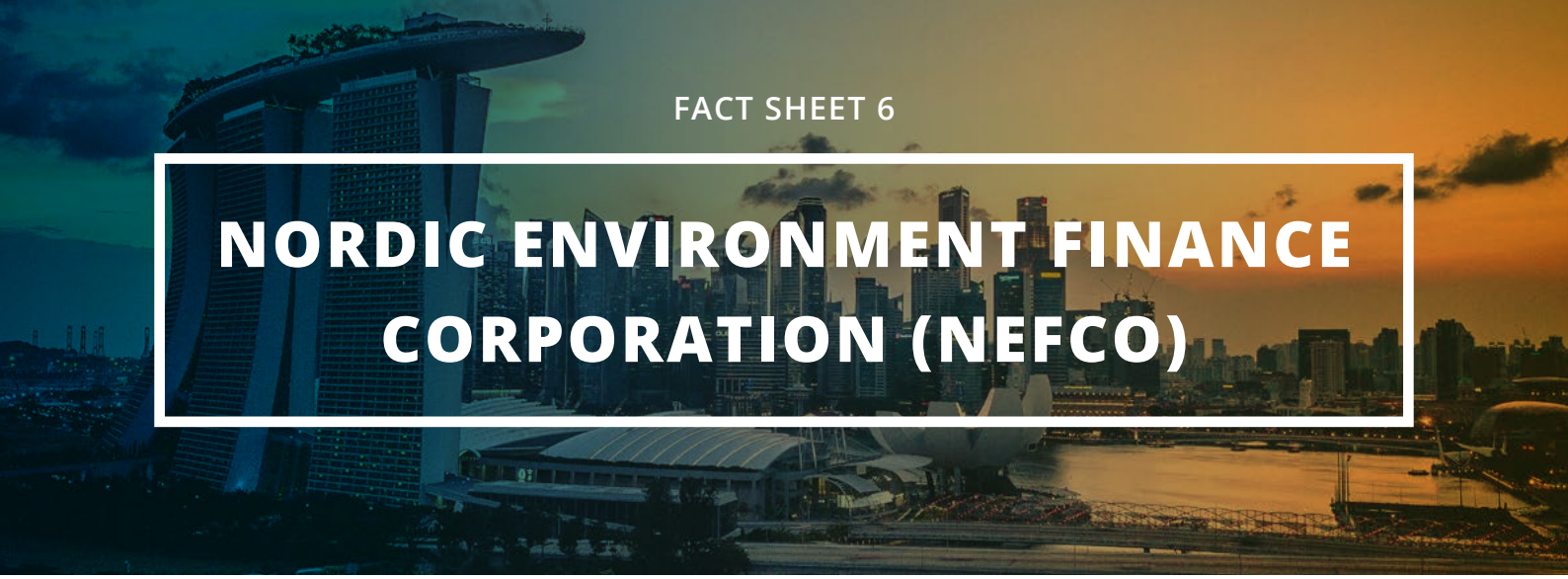
Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Reduction of Energy Consumption by Introducing an Energy-Efficient Wastepaper Processing System into a Packaging Paper Factory in Bekasi, West Java	Indonesia	EE	22-Dec-17	17822	EE
Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller	Indonesia	EE	04-Dec-17	325	EE
Introducing double-bundle modular electric heat pumps at AXIA SOUTH CIKARANG Tower 2	Indonesia	EE	10-Feb-17	166	EE
Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	Indonesia	EE	03-Jun-16	115	EE, Cooling
Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)	Indonesia	EE	24-Mar-16	145	EE, Cooling
Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang West Java	Indonesia	EE	24-Mar-16	176	EE, Cooling
Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	Indonesia	EE	29-Mar-15	21	EE, Cooling
Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	Indonesia	EE	29-Mar-15	120	EE
Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller	Indonesia	EE	31-Oct-14	114	Air cooling
Introduction of Solar PV System at Salt Factory	Kenya	Power generation	27-Jan-20	630	Solar PV

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Electrification of communities using Ultra Low Head Micro Hydro Power Generation system	Kenya	Power generation	27-Jan-20	75	Hydro power
Introduction of Amorphous High Efficiency Transformers in Power Grid	Laos	EE	24-May-23	2,109	EE
Introduction of 14MW floating solar power system in Vientiane	Laos	Power generation	05-Aug-22	6,838	Solar PV
Introduction of 11MW Solar Power Project in Savannakhet Province	Laos	Power generation	22-Jun-22	4,795	Solar PV
Lao PDR Energy Efficient Datacenter Project (LEED)	Laos	EE	31-Jul-17	567	EE
Solar Power on Rooftop of School Building Project	Maldives	Power generation	15-Jul-18	129	Solar PV
Introduction of 15MW Solar Power System near New Airport	Mongolia	Power generation	02-Jun-23	17,577	Solar PV
A HIGH EFFICIENCY AND LOW LOSS POWER TRANSMISSION AND DISTRIBUTION SYSTEM IN MONGOLIA	Mongolia	EE	16-Nov-17	467	EE
10MW Solar Power Project in Darkhan City	Mongolia	Power generation	26-May-17	11,221	Solar PV
Installation of 12.7 MW Solar Power Plant for Power Supply In Ulaanbaatar Suburb	Mongolia	Power generation	26-May-17	11,223	Solar PV
Centralisation of heat supply system by installation of high-efficiency Heat Only Boilers in Bornuur soum Project	Mongolia	EE	30-Jun-15	206	EE
Installation of high-efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	Mongolia	EE	30-Jun-15	92	EE
Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste (MSW)	Myanmar	Waste	16-Jan-20	4067	Waste to energy

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Introduction of 0.4MW Rooftop Solar Power System in Supermarket and Hotel	Palau	Power generation	11-Jul-21	259	Solar PV
Small Scale Solar Power Plants for Commercial Facilities in Island States II	Palau	Power generation	12-Jul-16	315	Solar PV
Small Scale Solar Power Plants for Schools in Island States	Palau	Power generation	12-Jul-16	108	Solar PV
Small scale solar power plants for commercial facilities in island states	Palau	Power generation	21-Apr-15	227	Solar PV
n.a.	Papua New Guinea	n.a.	n.a.	n.a.	n.a.
Introduction of 1MW Rooftop Solar Power System in Vehicle Assembly Factory	Philippines	Power generation	09-Apr-23	607	Solar PV
Installation of 1.2MW Rooftop Solar Power System in Freezing Warehouse	Philippines	Power generation	04-Nov-21	793	Solar PV
Introduction of 1.53MW Rooftop Solar Power System in Auto Parts Factories	Philippines	Power generation	04-Nov-21	954	Solar PV
Introduction of 4 MW Rooftop Solar Power System in Tire Factory	Philippines	Power generation	04-Nov-21	2494	Solar PV
Introduction of High Efficiency Electrolyzer in Chlor-Alkali Production Plant	Saudi Arabia	EE	13-Jul-18	2740	EE
Introduction of 5MW Floating Solar Power System on Industrial Water Reservoir in Thailand	Thailand	Power generation	28-Sep-20	2,539	Solar PV
Installation of Co-Generation Plant for On-Site Energy Supply and High Efficiency Non-Inverter Type Centrifugal Chiller in Motorcycle Factory	Thailand	EE, power generation	17-Jun-22	7,122	EE
Introduction of 30MW Rooftop Solar Power System to Large Supermarkets	Thailand	Power generation	27-Mar-20	12,699	Solar PV

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Introduction of Heat Recovery Heat Pumps to a Chicken Slaughtering Plant in Thailand	Thailand	EE	20-Sep-21	942	EE
Energy Saving for Air conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller	Thailand	EE	17-Jun-22	173	EE, Cooling
Power Generation by Waste Heat Recovery in Cement Industry	Thailand	Power generation	02-Aug-19	29,206	Waste to energy
Introduction of 3.4MW Rooftop Solar Power System to Air-conditioning Parts Factories	Thailand	Power generation	14-Jan-19	1,071	Solar PV
Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor	Thailand	EE	20-Apr-18	324	EE
Installation of High Efficiency Air Conditioning System and Chillers in Semiconductor Factory	Thailand	EE	20-Apr-18	3,327	EE, Cooling
Reducing GHG emission at Textile Factory of Luckytex (Thailand) Public Company Limited by Upgrading to Air-saving Loom	Thailand	EE	20-Apr-18	253	EE, Cooling
Introduction of Solar PV Systems on Rooftops of Factory and Office Building	Thailand	Power generation	21-Aug-17	440	Solar PV
Introduction of high-efficient wire stranding machines to the factory of YAZAKI EDS VIETNAM Co., LTD.	Vietnam	EE	28-May-19	426	EE
Introduction of Amorphous High Efficiency Transformers in Northern, Central and Southern Power Grids	Vietnam	EE	28-May-19	3,477	EE, energy distribution
Introduction of High Efficiency Water Pumps in Da Nang City	Vietnam	EE	28-May-19	599	EE, energy distribution
Installation of Energy Saving Equipment in Lens Factory	Vietnam	EE	28-May-19	927	EE

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Installation of Container Formation Facility at Lead Acid Battery Factory of Hitachi Chemical Energy Technology (Vietnam) Co., Ltd.	Vietnam		28-May-19	3,506	EE
Introduction of Energy-Efficient Air Conditioners in RICOH IMAGING PRODUCTS (Vietnam) CO., LTD	Vietnam	EE	15-Aug-18	112	EE, Cooling
Introduction of Amorphous High Efficiency Transformers in Southern and Central Power Grid	Vietnam	EE	15-Aug-18	3,533	EE
Introduction of Solar PV System at shopping mall in Ho Chi Minh	Vietnam	Power generation	15-Aug-18	112	Solar PV
Energy saving and work efficiency improvement by introducing a new chip-on-board LED system in Vietnam	Vietnam	EE	15-Aug-18	823	EE
Introduction of High Efficiency Air-conditioning in Hotel	Vietnam	EE	10-Oct-17	792	EE, Cooling
Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	Vietnam	EE	15-May-16	610	EE, energy distribution
Low carbon hotel project in Vietnam: Improving the EE of commercial buildings by utilisation of high efficiency equipment	Vietnam	EE	15-May-16	272	EE
Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam	Vietnam	EE	30-Nov-15	515	EE
Eco-Driving by Utilizing Digital Tachograph System	Vietnam	EE	04-Aug-15	292	Transportation energy efficiency



FACT SHEET 6

NORDIC ENVIRONMENT FINANCE CORPORATION (NEFCO)

The Nordic Environment Finance Corporation (NEFCO) that was launched in 2018 is supporting countries and the private sector to engage in Article 6 and carbon market-based cooperation through the Nordic Initiative for Cooperative Approaches (NICA). By targeting capacity building efforts through the piloting of practical Article 6 projects, NICA aims to develop a "Nordic" approach to understanding the Article 6 rulebook. Such an approach strives to meet international criteria while championing Nordic objectives to maintain NEFCO's position as a frontrunner in carbon markets. NICA aims to equip public and private Nordic actors with valuable expertise to deliver on mitigation action through carbon markets by eventually providing technical assistance and practical implementation, simultaneously aiding international partners (NEFCO 2022).

The work funded through NICA carries on from work within the Nordic Partnership Initiative on Upscaled Mitigation Actions (NPI) that was in operation from 2011 through to 2018 working on Nationally Appropriate Mitigation Actions (NAMA) Readiness Programmes specifically for the solid waste sector in Peru and the cement sectors in Vietnam. NICA champions an early approach and on-the-ground practical work for propelling Article 6 cooperation, considering long project lead times and maintaining Nordic leadership in carbon markets

SUMMARY TABLE

Specific sectors and technologies	Rural electrification and sustainable transport
Possible stakeholders and participants	Private and public stakeholders potentially including governments, public-private agencies, project developers, private researchers
Overall resources available (USD million)	Not available
Type of Article 6 cooperation	Article 6.2 guidance or Article 6.4 modalities and procedures
Relationship with NDCs	Designed to support Nordic and host country NDCs
Volume and price of ITMOs	NA
Sustainable development benefits	Aims to see how international partnerships can scale up sustainable development

KEY FACTS

NICA is funded by Finland, Norway, Sweden, NEFCO and the Nordic Council of Ministers' Working Group for Climate and Air. In 2022, the initiative proposed a general framework for Nordic countries' Article 6 cooperation entitled the "NICA framework" which was developed by external service providers via desk-based research including analysis of Nordic policies and priorities, as well as interviews with Nordic stakeholders. The framework suggests a vision for Nordic Article 6 collaboration and suggests the development of a common Nordic reporting platform for Article 6 and harmonised Nordic approach to capacity building (NEFCO n.d.).

Prior to this, the Nordic Partnership Initiative (NPI) which is the predecessor to the NICA, collaborated with Peru to form a main piloting project in the waste sector that ran from 2014-2018. The project aimed to highlight the climate finance streams available to Peru including through generating ITMOs under Article 6, while simultaneously addressing domestic issues such as the waste sector (CFI 2020).

INTENDED FORM OF COOPERATION

NICA aims to build capacity and collaborative action among Nordic stakeholders, both public and private, to disseminate knowledge and expertise to projects and countries globally. It strives to influence the dialogue on developing sound, practical rules for international adoption of Article 6, focused specifically on baseline-and credit approaches. Nordic countries can participate in Nordic piloting to build on sustainable development and environmental integrity, as well as for the purchasing of ITMOs. The focus is to address high-hanging fruit with partner countries to accelerate real, significant climate action.

NICA builds on existing Nordic programmes to pilot Article 6 in a cost and time efficient way and aims to do so through timely collaboration with projects such as the Beyond the Grid Fund and the Modern Cooking Facility for Africa that require less initial funding. The NICA framework should be regularly reviewed to account for regulatory changes and lessons learnt, including from Nordic engagement in international initiatives (NEFCO 2022).

TRANSACTIONAL SET-UP

In February 2022, NICA conducted an initial assessment of the readiness and interest of five countries in Africa, chosen based on representation of economic development, geography, and other factors. The results revealed commonalities over a lack of capacity but existing experience with carbon markets and a mutual desire to promote sustainable development through such activities. Nordic private companies and embassies were also present in all assessed countries revealing the potential for private sector engagement. In addition to the overarching assessment, interest and potential for Article 6 cooperation was more closely examined in East-Africa through a mapping exercise and stakeholder discussion. Mitigation Activity Idea Notes (MAINs) were subsequently developed for two potential pilot activities in rural electrification and sustainable transport (NEFCO 2022).

RELATIONSHIP WITH NDCs

The activities of NICA aim to support the realisation of Nordic and host country NDCs with the use of corresponding adjustments, at significantly reduced costs than through purely domestic means.

ACTIVITIES

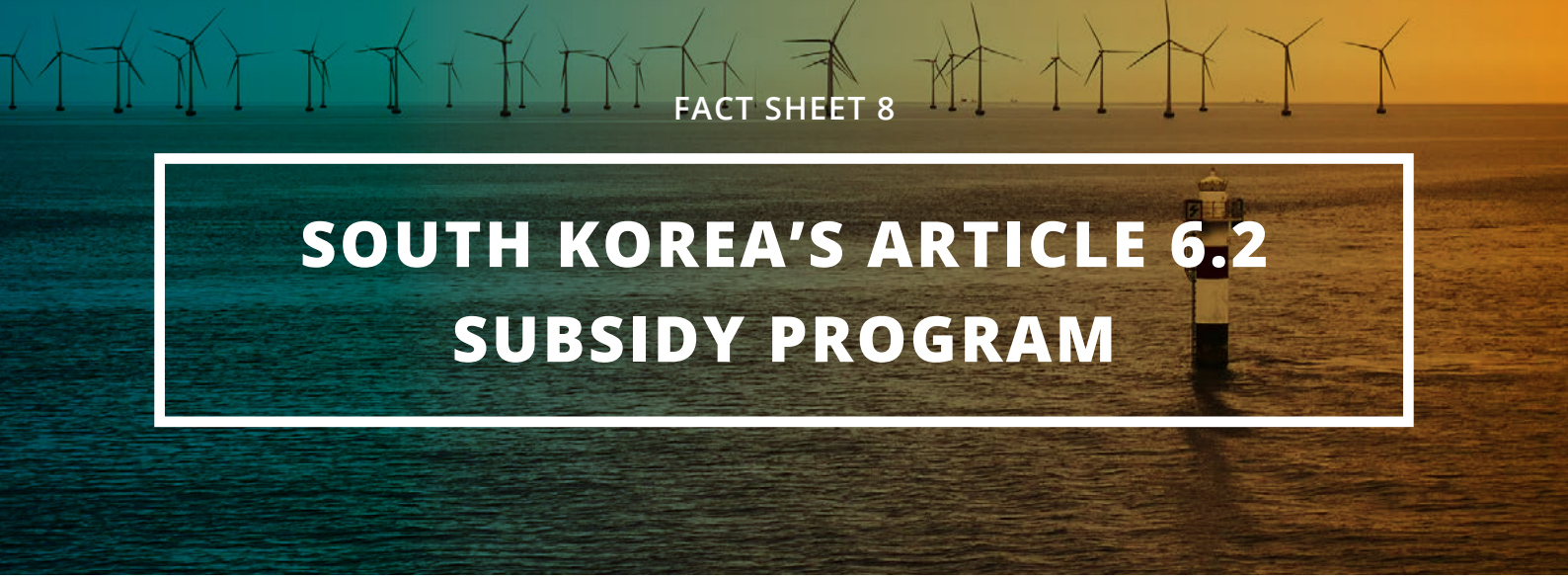
Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Cooperative Arrangement for the Solid Waste Sector	Peru	Solid waste sector	Aug 2021	n.a.	Methane recovery and flaring, biogas

FACT SHEET 7

SINGAPORE'S CARBON TRADING HUB

Recognising its small size and limited domestic mitigation options, Singapore states its intention to achieve emissions abatement through international cooperation in its NDC. In that vein, Singapore is seeking to build on its reputation as a leading financial trading hub to develop a carbon trading hub covering all types of carbon markets. Several relevant carbon exchanges are now registered in Singapore, including ACX (formerly Air Carbon Exchange), founded in 2019 and Climate Impact X (CIX), backed by state investment fund Temasek and founded in 2022 (Climate Impact X n.d.). Singapore has over 70 carbon market service businesses registered in its territory. To mobilise transactions, the government has allowed facilities covered by its carbon tax of USD 3.7/tCO_2 that up to 5% of the tax liability can be covered via international offsets with accompanying corresponding adjustments (Tan 2023). The incentive for entities to engage in Article 6 will rise as the carbon tax increases in two steps to USD 18.5 in 2024 and to USD 33.3 in 2026.

After Japan, Singapore has signed the most MoUs for cooperation under Article 6.2 out of all countries with a total of 13 agreements covering Bhutan, Cambodia, Chile, Colombia, Dominican Republic, Ghana, Indonesia, Kenya, Mongolia, Morocco, Papua New Guinea, Peru, Sri Lanka, Vietnam. Singapore has also signed MoUs with Gold Standard, Verra, the Global Carbon Council, American Carbon Registry and ART TREES. Singapore wants all these standards to generate ITMOs under Article 6.2 regardless of serious allegations against some of them regarding insufficient environmental integrity.



FACT SHEET 8

SOUTH KOREA'S ARTICLE 6.2 SUBSIDY PROGRAM

South Korea has recently launched a subsidy programme to develop Article 6.2 projects. In August 2023, USD 6.8 million was budgeted to support at least two projects with up to 80% of their cost following an earlier round in April 2023 with USD 7.5 million in support. In August 2023, the Korean Ministry of Trade, Industry and Energy allocated the first subsidies to the Seoul-based carbon market project developer Ecoeye to develop three large Article 6 projects abroad. These include a hydrofluorocarbon recycling project in Hanoi, Vietnam; a biomass project in Kampong Thom, Cambodia; and a cookstove project in Bangladesh (Kuo 2023b). This builds on strong engagement in the CDM where credits from projects with South Korean investment could be used in the domestic emissions trading scheme. As an example, the government bought 0.11 million CERs from a landfill gas project in Uzbekistan in January 2023. In its updated NDC submitted in late 2021, voluntary cooperation under Article 6 is explicitly stated to achieve 2030 targets of reducing emissions by 40% from 2018 levels (Republic of Korea 2021). President Yoon Suk Yeol has set a target of using 37.5 million offsets from overseas projects to help reach these goals (Kuo 2023b).

In May 2022, the Timor-Leste government struck an agreement with the private Korean company SK Group to develop large-scale forest carbon opportunities as well as CCS. In mid-2022, Korea set up an International Reduction Council to institutionalise its Article 6 approach and began scouting countries for potential Article 6 collaboration including through calls for overseas project proposals. The Korea Environment Corporation (K-ECO) mandated to manage environmental offset projects and created a preliminary list of 16 countries with whom it might form 6.2 agreements, including Bangladesh, Brazil, Colombia, Ethiopia, Peru (Reklev 2022; Gold Standard and Adelphi 2023). In 2022, South Korea agreed with Mongolia to cooperate on a waste methane emissions reduction project in Ulaanbaatar. the Narangjin landfill - aiming at an annual emission reduction of 540,000 tCO_2e (Ministry of Environment 2022). At COP27, a bilateral cooperation on Article 6 was signed. A private investor also signed an agreement with a local government in Mongolia to develop activities eligible for Article 6. In June 2023, Korea signed an MoU with Vietnam to officially collaborate under Article 6 after previously signing a more general framework agreement for cooperation on climate change in 2021. Cooperation will centre around operational approval methods and procedures, and assessments and sharing of achieved results that contribute to both countries' NDCs (Quantum Commodity Intelligence 2023a). Korea is also in discussion with six other Asian countries over future Article 6 cooperation (Quantum Commodity Intelligence 2023b). Additionally, Ecoeye, a trading house and project developer, has been selected by multiple South Korean government agencies to spearhead the development of Article 6 projects in Asia (Carbon Pulse, 2023c). South Korea and Oman have signed an MoU to cooperate in achieving carbon neutrality, especially regarding the establishment of green hydrogen infrastructure.

Additionally, ongoing talks are being held with the government of Gabon to establish bilateral agreements for the acquisition of ITMOs (Tilly 2022). Korea aims to buy REDD+ credits from Laos (and possibly Vietnam as they have budgeted subsidies for REDD+ feasibility studies by private project developers).

In September 2023, South Korea's government inked an Article 6 agreement with Vietnam and Uzbekistan. Among the four projects, three involve collaboration with Vietnam and one is with Uzbekistan. These initiatives are expected to yield over 10.3 million international carbon credits, attracting an investment of KRW 27 billion. The government's contribution of 5.9 billion won is projected to result in overseas GHG mitigation of approximately 260,000 tons. The Korean Ministry of Trade, Industry, and Energy (MOTIE) aims to announce 2024 projects early next year, proposing a budget increase from the current year's six billion won to 33 billion won (MOTIE 2023).

SUMMARY TABLE

Specific sectors and technologies	Waste, cooling, REDD+
Possible stakeholders and participants	Korean government, private sector entities and host countries.
Overall resources available (USD million)	13.2
Type of Article 6 cooperation	Article 6.2 and the mechanism under Article 6.4 will contribute to enhancement of the global mitigation efforts
Relationship with NDCs	The guidance, rules, modalities, and procedures for market approaches should incorporate flexibilities to accommodate various NDCs under the Paris Agreement. This aims to facilitate and promote participation from all Parties (Republic of Korea 2017).
Volume and price of ITMOs	Not available
Sustainable development benefits	The activities should align with the sustainable development objectives and strategies of the involved parties, thereby contributing to the attainment of the SDGs (Republic of Korea 2017).

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Narangjin landfill, Ulaanbaatar	Mongolia	Waste	2022	540,000	Collect and incine-rate methane gas generated in landfill

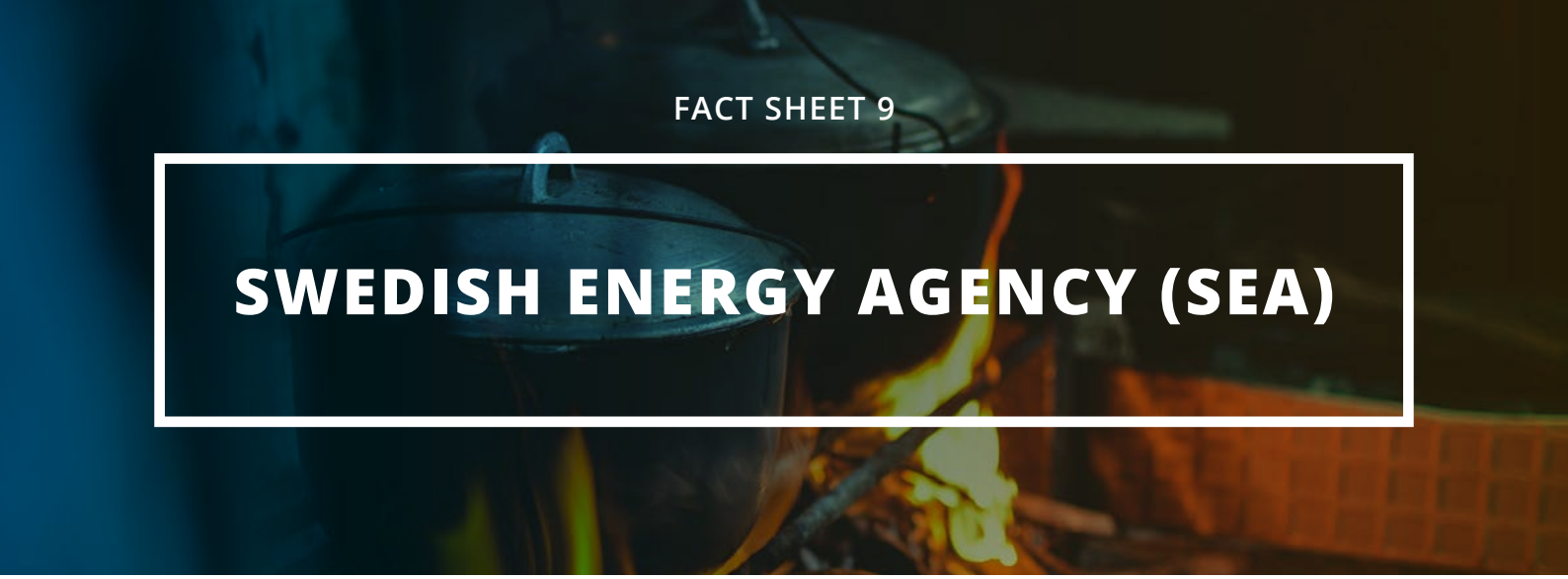
Other projected activities include:

1. Uzbekistan: Conservation of Fuel in a Brick Plant, led by the Korea Institute for Climate Change (KICC) and Wecos, aiming to reduce 10,741 tCO_2e.

2. Vietnam: Recovery and Regeneration of Waste Refrigerant, led by Ecoeye, OUNR2TECH, and V-Water Solutions, aiming to reduce 30,000 tCO_2e.

3. Vietnam: Enhancing Coal Kiln Processes, led by Grit C and Noble Grit, aiming to reduce 975,609 tCO_2e.

4. Vietnam: 7MW roof solar generation, led by the SK E & S, aiming to reduce 8302 tCO_2e



FACT SHEET 9

SWEDISH ENERGY AGENCY (SEA)

The Swedish Energy Agency (SEA) is operationalising collaboration within the framework of Article 6 of the Paris Agreement. This effort encompasses the creation of bilateral agreements with other nations and the identification of activities aimed at reducing emissions. The SEA has actively participated in testing the implementation of Article 6 by developing Article 6 proof baseline and monitoring methodologies to bolster the advancement of mitigation initiatives with the potential to produce ITMOs.

The SEA has initiated a collaborative initiative with the GGGI. This programme leverages existing local structures and networks in host countries to facilitate connections. Additionally, it assists by strengthening institutional capabilities and governance frameworks in potential host countries. The pilots highlighted in the previous editions did not progress towards implementation due to various reasons, including shifts in the partner country national policy development, and to some extent the COVID-19 pandemic. Currently, SEA has established MoUs with three additional countries—namely, the Dominican Republic, Ghana, and Nepal—demonstrating a shared desire to collaborate under Article 6 (SEA n.d. a).

SUMMARY TABLE

Specific sectors and technologies	Energy Sector: generation, renewable energy, efficiency and management, waste to energy, and capacity building (SEA n.d. a)
Possible stakeholders and participants	The Swedish governments and governments of the nation's hosting, institutions, private entities
Overall resources available (USD million)	Not available
Type of Article 6 cooperation	The SEA is prioritising partnerships in accordance with Article 6.2, with the intention of participating in Article 6.4 activities once operational (SEA n.d. b)
Relationship with NDCs	Within the boundaries outlined in the host country's NDC
Volume and price of ITMOs	Not available
Sustainable development benefits	Activities capable of generating emission reductions, primarily within the energy sector, must meet various requirements, including contributing to sustainable development. Establishing a financial motivation for energy firms to produce electricity using unconventional renewable energy sources.

KEY FACTS

The SEA aids the Swedish Government, society, and external entities by providing information, knowledge, and analytical insights regarding energy supply and utilisation within Sweden and internationally. The SEA has been authorised to procure ITMOs (Internationally Transferred Mitigation Outcomes) from sources outside Sweden, up to 8% of the 2030 target and 2% of the 2040 target (Michaelowa et al. 2021).

Beyond meeting its personal emission reduction target, Sweden aims to contribute to increasing the global mitigation ambition and the overall level of low emissions development in cooperating countries through its ITMO purchases. Its purchasing strategy focuses specifically on energy related emissions. While simultaneously establishing partnerships with other nations, the SEA is actively engaged in sourcing actions that can reduce emissions, primarily within the energy domain. All proposed activities need to gain approval from the host country's government and adhere to various stipulations, including transparency, contributions to sustainable development, and the safeguarding of human rights. Furthermore, the emission reductions stemming from these activities must be additional (SEA n.d. a).

INTENDED FORM OF COOPERATION

The MoU signed between Sweden and the Dominican Republic, Ghana, and Nepal signifies a collaborative effort between Sweden and these countries to work together on issues related to carbon markets, emissions trading, and sustainable development. This reflects their commitment to nations to utilise Article 6 mechanisms. If the projected volume of resulting ITMOs exceeds Sweden's individual investment capacity, additional countries or entities interested in purchasing may be considered for involvement in the project (Greiner et al. 2020). Initial assessments performed suggest that a price of USD 30 /tCO_2e for emission reductions would position 'firm and flexible' renewable energy sources as economically viable alternatives to coal-fired power plants. This price is below Sweden's carbon tax, which is approximately USD 137 /tCO_2e (WSP Ambiental SA 2021).

TRANSACTIONAL SET-UP

SEA is currently in dialogue with several potential partner countries on structuring transactions, setting up an infrastructure for corresponding adjustments, and identifying capacity needs with the aim of completing transactions of ITMOs linked to a corresponding adjustment. Capacity building is considered (as part of a transaction collaboration) a key element to ensuring the quality of ITMOs purchased. The country partners with the GGGI have set up the MATS programme[31] to continue identifying and structuring mitigation activities and provide support to countries in establishing governance frameworks and developing capacities to operationalise international mitigation collaboration under Article 6.

RELATIONSHIP WITH NDCs

The SEA's engagement with a partner country involves their NDCs within the context of Article 6.2 cooperation. This collaboration focuses on leveraging Article 6.2 mechanisms to support the

[31] Mobilising Article 6 Trading Structures (MATS), implemented jointly by the Swedish Energy Agency and the Global Green Growth Institute.

partner country in the implementation of emission reduction projects and initiatives that align with the partner country's NDC commitments.

ACTIVITIES

To date, no specific activities have been undertaken. The SEA has established MOUs on Article 6 collaboration with the Dominican Republic, Ghana, and Nepal. Projects are currently being formulated in these countries. Additionally, discussions are ongoing with several other nations regarding potential collaboration under Article 6 (SEA n.d. a).

FACT SHEET 10

SWITZERLAND - THE KLIK FOUNDATION

The Klik Foundation for Climate Protection and Carbon Offset finances the implementation of environmentally friendly technologies and innovations both within Switzerland and internationally. Klik fulfills the legal obligation of Swiss motor fuel importers, as mandated by the Swiss CO_2Act, to offset a portion of the carbon emissions from the Swiss transport sector. Moreover, the foundation supports and coordinates climate protection programmes at the international level, from their development to implementation on behalf of the Swiss government, in countries that have established bilateral cooperation agreements with Switzerland on climate protection. Klik organ s the purchase of the resulting ITMOs on behalf of the government. According to the revised CO_2 law, the actual carbon offset rate for the years 2025 to 2030 will only be determined by the Federal Council in the future. Klik Foundation (2023) has acquired 0.9 million ITMOs and expects to acquire a maximum of 21.8 million ITMOs in the period 2025 to 2030. (Klik Foundation n.d. a).

SUMMARY TABLE

Specific sectors and technologies	Biological carbon sequestration, nuclear energy, and fossil fuels (efficiency) are excluded, while all other sectors are eligible.
Possible stakeholders and participants	Government of Switzerland (GoS), private sector companies and partner countries.
Overall resources available (USD million)	Cost covering, USD 550 – 1100 million (CHF 500 - 1000 million) over 10 years expected.
Type of Article 6 cooperation	Article 6.2, based on a government-to-government approach with host country and buyer country approval and corresponding adjustments to GHG inventories.
Relationship with NDCs	Funded programmes must be additional to the partner country's unconditional NDC measures and are agreed upon through close collaboration between the respective country and Switzerland.
Volume and price of ITMOs	ITMOs, aiming to reach a total of 20 million t CO_2e between 2022 and 2030. As of July 2023, Klik Foundation sets ITMO prices at 21 CHF (USD 23.50), with the ITMO portfolio standing at 8.7 million ITMOs (Gourlay 2023).
Sustainable development benefits	Preference is given to activities that support the Sustainable Development Goals and encourage low-carbon development, as promoting sustainable development is a fundamental requirement in Swiss CO_2 law. The Klik programmes will enhance ambition and deliver social, environmental, and health advantages.

KEY FACTS

The Klik Foundation was founded in 2013 by the Swiss Petroleum Association to meet its legal responsibility of offsetting a portion of the CO_2 emissions arising from the consumption of fossil motor fuels in Switzerland (Klik Foundation n.d. b). In 2021, the Klik Foundation began working to fulfil its international obligation alongside its ongoing carbon offset efforts within Switzerland, aiming to acquire emission reduction activities abroad. Given that the CO_2 law was rejected by public referendum in 2021, the government will now define the share of international offsets that can be used against the NDC. Estimates of ITMO import needs have been oscillating between 20 and 35 million tCO_2e. The Foundation offers assistance and management for activity development under Article 6 guiding the entire process from development to implementation. The Foundation implements these initiatives in countries that have entered into bilateral cooperation agreements with Switzerland for climate protection. In October 2020, the Foundation signed its first bilateral agreement with the Peruvian government. As of August 2023, the Swiss government had established bilateral agreements with 11 countries (in chronological order): Peru, Ghana, Senegal, Georgia, Vanuatu, Dominica, Thailand, Ukraine, Morocco, Malawi, Uruguay. Among these countries, the Foundation is actively developing a portfolio of 19 programmes in eight of them, with the potential of issuing international attestations.

In May 2023, Switzerland set a precedent by becoming the first nation to submit an initial report to the UN on its projects in Ghana, Thailand, and Vanuatu under Article 6.2 of the Paris Agreement, providing detailed information on its international mitigation activities. The net emissions reductions for the three projects from 2022 to 2030 are approximately 1.13 million tonnes of CO_2e in Ghana, 612,900 tonnes of CO_2e in Thailand, and 97,200 tonnes of CO_2e in Vanuatu. In Ghana, the project focuses on supporting climate-smart agricultural practices for sustainable rice cultivation. In Thailand, it aims to scale the operation of e-buses on privately owned and scheduled public bus routes in Bangkok, while expanding solar-powered electrification across Vanuatu. The initial report also affirmed that as part of the agreement with each of the three nations, Switzerland will voluntarily cancel 2% of all ITMOs, a contribution that will not be attributed to any NDCs (UNFCCC 2023).

During the Africa Climate Summit in September 2023, the Governments of Kenya and Switzerland signed an MoU marking the initial step toward the development of a bilateral cooperation agreements (Klik Foundation 2023).

The Klik Foundation requires carbon offset projects and programmes to be registered with the Swiss Federal Office for the Environment (FOEN) to ensure that the resulting emission reductions can be transferred to the foundation as attestations.

INTENDED FORM OF COOPERATION

Before the Klik Foundation can sign a contract for the acquisition of generated ITMOs, the selected activities must be approved as appropriate by both the partner country and Switzerland. Additionally, the competent government agencies of the partner country must be actively engaged to establish the connection between an activity and the country's national climate policy (Klik Foundation n.d. c). During the selection process, the Klik Foundation will focus on new priority activities while also assessing existing activities based on carbon standards (e.g., CDM activities) for generating emission reductions. Eligibility criteria have been specified in an ordinance in early 2022.

Prohibited types of activities include (Bundesamt für Umwelt BAFU and Swiss Federal Office of Energy SFOE 2022):

a. Investments in the use of fossil fuels for energy production or in the extraction of fossil fuels
b. the use of nuclear energy
c. the use of hydroelectric power plants with an installed production capacity exceeding 20 MW
d. Projects in large industrial plants that do not correspond to the state of the art available on the global market
e. Activities in the waste sector without material or energy use or reduction of waste
f. Projects for biological CO_2 sequestration
g. the reduction of deforestation
h. the degradation of forests
i. the abandonment of fossil fuel extraction
j. activities that conflict with environmental and human rights conventions ratified by Switzerland
k. Activities that have significant negative social or environmental impacts
l. Activities that contradict concerns of Switzerland's foreign or development policy

Activities will need approval from both the host and investor countries.

Private sector partners must highlight their capability, either independently or as part of a consortium, to design and execute suitable activities, often on a national scale and can submit their applications online to be considered as partner organisations and interested entities (Klik Foundation n.d. d). The process is structured as follows:

- Answering general or country-specific calls for proposals, partner organisations submit Mitigation Activity Idea Notes (MAIN). If the country has not yet signed a bilateral agreement, a Letter of Intent (LoI) from the host government to enter a bilateral agreement with the Swiss government needs to be provided.
- Pre-selected activities are awarded a Letter of Support from Klik and are asked to request a respective LoI from Switzerland. Upon issuance of a Swiss LoI, the foundation will then financially support the preparation of a detailed Mitigation Activity Design Document (MADD).

TRANSACTIONAL SET-UP

After the establishment of a bilateral agreement between the partner country and the Swiss government, the Klik Foundation becomes eligible to sign purchase agreements. The preparation of the MADD is then followed by negotiation of a Mitigation Outcome Purchase Agreement (MOPA).

RELATIONSHIP WITH NDCs

As part of its NDC under the Paris Agreement, Switzerland has pledged to reduce its emissions by 50% from 1990 levels by 2030. While the version of the CO_2 Act that was rejected by referendum in 2021 contained a numerical limit for ITMO imports, the exact share of the NDC that is to be covered by import of ITMOs will be determined by the Swiss government.

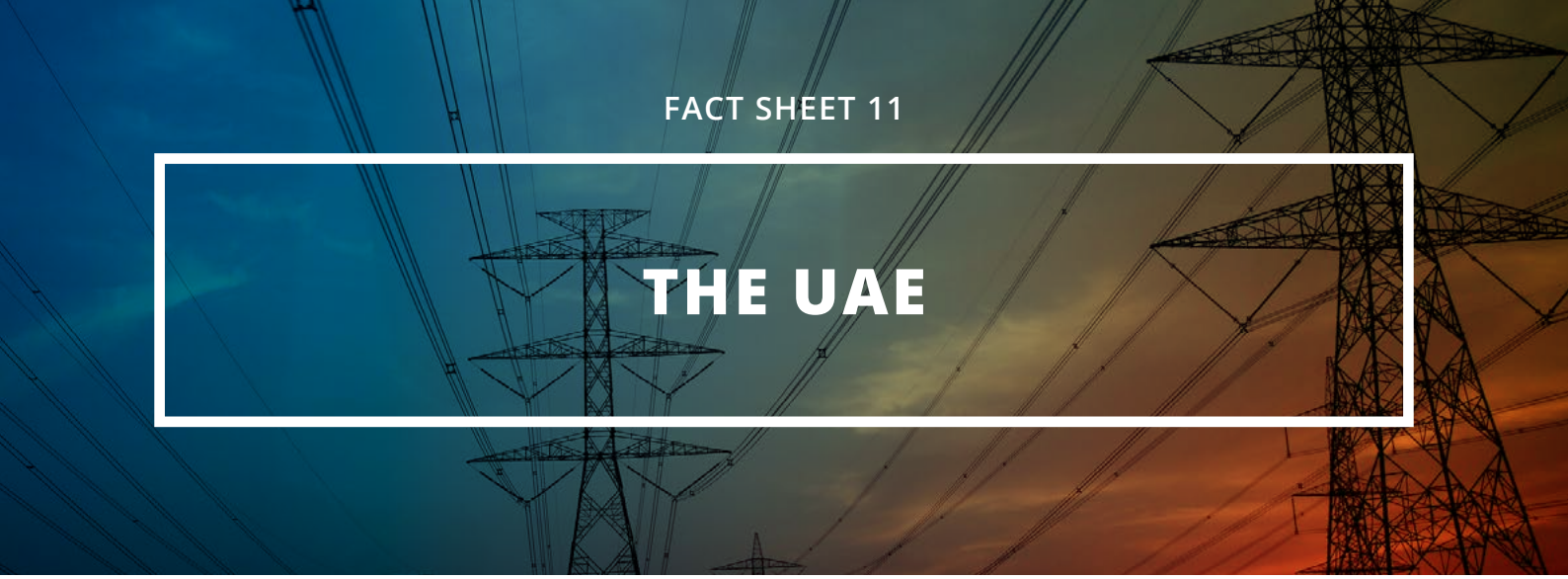
The connection between the ITMOs to be acquired and the NDC of the host country is established through thorough consultation with relevant agencies of the partner countries. In the instance of Peru, it was agreed to apply corresponding adjustments in its reporting for the target year 2030. During the first and second calls for proposals for private organisations, only activities within sectors covered by the host countries' NDC were eligible and they were required to be supplementary to both the NDC and a BAU emissions scenario (Klik Foundation n.d. e).

ACTIVITIES

The Klik Foundation has already chosen the following activities for further development (Klik Foundation n.d. f), more activities are to be contracted in the next years.

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Tuki Wasi ("Pleasant Homes") Improved Cook Stoves in rural areas	Peru	Energy	2020	270,000	Efficient cookers (built-in masonry ovens)
National Clean Energy Access Programme	Ghana	Energy	2021	750,000	Various renewable energy technologies (e.g., solar PVs, solar lanterns, solar home systems and improved cooking systems)
Sustainable Waste Management Programme	Senegal	Waste	2021	750,000	Waste recycling, composting of organic waste, landfill gas collection and usage for electricity generation
Green credit line for SMEs Investing in clean tech	Peru	Various	2021	550,000	Multiple technologies possible
Dissemination of Domestic Biogas Digesters in Senegal's Rural and Peri-Urban Areas	Senegal	Energy	2021	550,000	Biogas digesters
Catalysing Investments into Energy Efficiency	Morocco	EE	2021	200,000	Energy efficiency measures tackling electric equipment and appliances in the industrial and tertiary sectors.
Bangkok E-Bus	Thailand	Transport	2022	1,500,000	Electric vehicles
Clean cooking in Malawi's urban and peri-urban areas	Malawi	Energy	2022	1 million	Clean cooking
Clean Cooking - Transformative Cookstoves in Rural Ghana	Ghana	Energy	2022	500,000	Clean cooking

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Malawi Dairy Biogas	Malawi	Waste	2022	360,000	Waste to energy (Biogas)
EcoCar Solaire	Senegal	Transport	2022	300,000	Solar-powered electric vehicles
Green Finance for E-Mobility	Dominica	Transport	2022	160,000	Electric and hydrogen-powered vehicles
Georgia Energy Efficiency Scheme Programme (GEES)	Georgia	EE	2022	100,000	EE
Sustainable Manure Treatment (SMT) Programme	Mexico	Agriculture (livestock)	2022	N/A	Anaerobic biodigesters
AREP Peru Additional Renewable Energy Platform Peru	Peru	Power generation	2023	900,000	Solar PV
Market transformation through the introduction of Green split ACs	Ghana	Green cooling	2023	500,000	AC technology using low-GWP refrigerants
Treating Waste from Markets and Slaughterhouses in Biodigesters	Morocco	Waste	2023	500,000	Anaerobic biodigesters and biogas-based combined heat and power generation
Battery Energy Storage and Renewable Energy Programme	Senegal	Energy	2024	750,000	Battery Energy Storage/RE



FACT SHEET 11

THE UAE

Although the UAE's recently revised NDC states that it aims to rely more on domestic efforts for emissions mitigation, it does signal intention to cooperate under Article 6 and its recent activity in the field of carbon markets confirms this (UAE 2022).

In the run-up to COP28 the UAE has engaged with Article 6. In contrast to other countries, the engagement is coming primarily through private sector players. The carbon market project developer Blue Carbon was set up in October 2022 by a member of the ruling family of Dubai, Sheikh Ahmed Dalmook Al Maktoum. The company has scouted aggressively for huge forestry projects in Africa and Asia. It has signed MoUs with, Liberia, Tanzania, Zambia, and Zimbabwe (Kiernan 2023; Manuell 2023). Reportedly the area of forestland covered by the MoUs reaches 15 million ha, relative to 20% of the area of Zimbabwe, 10% of Liberia and Zambia and 8% of Tanzania (Pearce 2023). Blue Carbon alone will have the right to sell carbon credits from the forests included in the 30-year deal with Liberia and will get 70% of the sale price of carbon credits, with 30% left for Liberia (ibid). Blue Carbon has partnered with Singapore's ACX to sell its credits on that exchange (Velev 2023). Furthermore, the UAE Independent Climate Change Accelerators (UICCA) group of private companies including the Mubadala sovereign wealth fund, renewable energy company Masdar and the UAE's largest lender First Abu Dhabi Bank indicated its intention to buy USD 450 million worth of carbon credits generated in Africa by 2030 at the African Climate Summit in Nairobi in September 2023. The Abu Dhabi Global Market is developing a carbon market trading platform, which again indicates its desire to be a frontrunner in the carbon market world (The National News 2023).

SUMMARY TABLE

Specific sectors and technologies	Avoided deforestation
Possible stakeholders and participants	Private companies
Overall resources available (USD million)	USD 450 million
Type of Article 6 cooperation	Article 6.2
Relationship with NDCs	Unclear
Volume and price of ITMOs	Not available
Sustainable development benefits	Unclear

FACT SHEET 12

THE WORLD BANK – STANDARDISED CREDITING FRAMEWORK

The Standardized Crediting Framework (SCF) developed and supported by the World Bank's Carbon Initiative for Development (Ci-Dev) was one of the first pilot programmes internationally for potential carbon crediting under the Paris Agreement. The SCF follows a country-led approach to emission reduction crediting that simplifies and streamlines processes and lowers transaction costs. Following the approval of the Article 6 rulebook, it is being rolled out in eight partner countries (Burkina Faso, Uganda, Mali, Rwanda, Kenya, Madagascar, Ethiopia, and Bangladesh). The SCF helps countries with i) the preparation of Ci-Dev programmes for emissions reductions crediting post-2020 in all nine countries, ii) capacity-building of the host governments on Article 6 implementation, and iii) the collection of insights that could inform the negotiations on market mechanisms as well as application beyond the countries of interest for this assignment.

SUMMARY TABLE

Specific sectors and technologies	Energy access (incl. biogas, rural electrification, solar home systems, ethanol cookstoves, clean cookstoves)
Possible stakeholders and participants	World Bank through Carbon Initiative for Development (Ci-Dev) Ci-Dev partner countries through focal point ministries (mostly Ministry in charge of environment, planning, development and/or finance), incl. Burkina Faso, Uganda, Mali, Rwanda, Kenya, Madagascar, Ethiopia, and Bangladesh Ci-Dev donor countries Project developers Local private sector and civil society organisations
Overall resources available (USD million)	n.a.
Type of Article 6 cooperation	Article 6.2 cooperative approaches
Relationship with NDCs	Support a country's climate action plans and Nationally Determined Contribution (NDC) under the Paris Agreement Contribution to achievement of buyer countries NDC; potentially also RBCF for achievement of host party NDC
Volume and price of ITMOs	Methodology development in progress; final volume and price to be determined on case-by-case basis
Sustainable development benefits	Improved energy access for rural and urban households Health benefits for households by replacing firewood

KEY FACTS

The Standardized Crediting Framework (SCF) is a streamlined and host country-owned approach for an emission reduction crediting framework. The SCF was initially piloted in Senegal (rural electrification project) and Rwanda (clean cooking project) and proved to reduce transaction costs, save time in the generation of emission reductions, improve transparency in national decision-making and allow for faster payments compared to the CDM.[32]

Key elements of the SCF include[33]:

- **Positive lists for additionality** – streamlined approaches for assessing additionality
- **Streamlined MRV approaches** – more efficient processes appropriate for the country
- **Efficient governance arrangements** – building on countries' existing institutions to avoid the creation of new institutions and improve transparent decision-making processes
- **Simplified project cycle** – validation steps is eliminated, with verification, compliance and performance combined in one step

Overall, the SCF aims to helps existing carbon crediting programmes in the energy access subsector to adjust to the new regulatory environment under Article 6 of the Paris Agreement to secure the generation of compliance credits in the future.

Moreover, the SCF helps host countries prepare for their Article 6 engagement by supporting the set-up of institutional frameworks, including the SCF governing board, technical committee, and administrator, and tests the decision-making process along the project cycle from listing to issuance and authorisation and transfer with a concrete project and real investment.

INTENDED FORM OF COOPERATION

The SCF aims to facilitate Article 6.2 cooperative approaches.

TRANSACTIONAL SET-UP

Ci-Dev acts as a trust fund who purchases Mitigation Outcomes from the energy access activities in host countries. Emission Reductions Payment Agreements (ERPA) are signed between Ci-Dev and project developers. Mitigation outcomes are eventually transferred to donor countries that sign bilateral agreements with host countries.

RELATIONSHIP WITH NDCs

The SCF supports country's climate action plans and NDC's under the Paris Agreement through voluntary cooperative approaches. ITMOs can be used by buyer countries for their NDC achievement (including corresponding adjustments). Depending on the host country's NDC mitigation outcomes generated under the SCF can also potentially be used as results-based climate finance.

[32] *https://www.ci-dev.org/sites/default/files/2022-03/Ci_Dev_Brochure_SCF_2022%20Update_Rwanda%20and%20Senegal%20Inactive.pdf*
[33] *https://www.ci-dev.org/standardized-crediting-framework*

ACTIVITIES

Name of activity	Country	Sector	Start date	Emission reduction potential (tCO_2e)	Technology
Ethiopia Clean Cooking Energy Program; Ethiopia Off-Grid Renewable Energy Programme	Ethiopia	Energy	2009; 2016	Methodologies in development	Biogas; Rural electrification
KTDA Small Hydro; Kenya Solar Lighting	Kenya	Energy	2012	Methodologies in development	Hydropower; Rural Electrification;
Ethanol cookstoves	Madagascar	Energy	2012	Methodology in development	Renewable fuel cookstove
Mali Rural Electrification Programme	Mali	Energy	2018	Methodology in development	Rural Electrification
Clean and improved cooking; Rwanda Rural Electrification	Rwanda	Energy	2020	Methodologies in development	Clean and efficient cookstoves; Solar Home Systems
Accelerating Electrification through Grid Extension and Off-Grid Electrification in Rural Areas of Uganda	Uganda	Energy	2015	Methodologies in development	Rural Electrification
West Africa Biodigesters	Burkina Faso	Energy	2021	Methodology in development	Biodigester
Bangladesh Solar Home Systems	Bangladesh	Energy	2012	Methodology in development	Solar Home Systems

FACT SHEET 13

THE WORLD BANK – THE TRANSFORMATIVE CARBON ASSET FACILITY

The Transformative Carbon Asset Facility (TCAF) is a World Bank trust fund developed in partnership with several donor countries. The aim is to support developing countries increase their NDC ambition through transformative mitigation programmes. TCAF initiative supports the implementation of upscaled crediting options of the selected sectoral or policy interventions under policy-based, sector-based, or jurisdictional programmes.

TCAF presents a hybrid payment structure, channelling payments for Verified Emission Reductions (VERs) through results-based climate finance and the purchase of ITMOs under Article 6. With this innovative structure the initiative aims to test various methods to transfer measurable, reportable, and verifiable mitigation outcomes between parties and provide stringent accounting and transparency to ensure environmental integrity.

SUMMARY TABLE

Specific sectors and technologies	Any sector linked to the mitigation goals of the host country's NDC. Policy-based, sector-based, or jurisdictional programmes.[34]
Possible stakeholders and participants	World Bank. Donor countries: Canada, Germany, Norway, Spain, Sweden, Switzerland, and the United Kingdom. Recipients of funding and support: Developing countries.[35]
Overall resources available (USD million)	USD 210 million.[36]
Type of Article 6 cooperation	The pilot has been designed as instrument-neutral: recognition of mitigation outcomes could happen under Article 6.2 or Article 6.4.[37] Nevertheless, transactions under Article 6.2 seem more likely.[38]
Relationship with NDCs	Emission reductions financed through results-based climate finance can be used by the host country to meet its NDC target. Emission reductions financed under Article 6 require corresponding adjustment and cannot be used to meet the host country's domestic climate targets.
Volume and price of ITMOs	Average size of the programmes is 30-50 million USD in results-based payments, for a total of four programmes Each programme should generate five million tons of emission reductions over 5–7-year payment period of 2021-2027.[39]
Sustainable development benefits	TCAF programmes need to be consistent with the UN Sustainable Development Goals (SDGs).[40]

[34] See the '*TCAF Guidebook*' for further information and examples of the key transformative actions supported by TCAF.
[35] Transformative Carbon Asset Facility (TCAF). Who We Are. 2023. Available at: *https://www.tcafwb.org/who-we-are*
[36] Transformative Carbon Asset Facility (TCAF). Who We Are. 2023. Available at: *https://www.tcafwb.org/who-we-are*
[37] Transformative Carbon Asset Facility (TCAF). Core Parameters for TCAF operations. Available at *https://www.tcafwb.org/sites/default/files/2023-03/TCAF_Core%20parameters_Updated%20Dec%202022.pdf*

KEY FACTS

TCAF aims to assist countries with implementing market-based carbon pricing instruments and sectoral mitigation measures. The main objectives of the programme are:

- to develop innovative carbon accounting methodologies to quantify emission reductions achieved by policies as well as economy/sector-wide programmes
- to create favourable conditions for private sector investment while informing the development of standards and agreements for future carbon crediting instruments and transfer of mitigation assets
- to explore accounting for emission reduction credits from various carbon pricing schemes, allowing for flexibility in market-based climate mitigation approaches and for countries to implement more ambitious carbon pricing instruments and policies
- to generate carbon assets that have strong environmental integrity and a high likelihood of being eligible for use against NDC targets, using conservative baselines and stringent monitoring and accounting practices; and
- to purchase a portion of the carbon assets (mitigation outcomes) from the underlying programmes and policies, while the remaining part will be allocated to the host country.

Transformative mitigation actions which could qualify for TCAF support include:[41]

- Price-based interventions such as carbon taxes, Emission Trading Systems, tax, and subsidy reforms and feebates
- Regulatory instruments, for instance, in the form of technology or performance standards or prohibitions
- Incentive and expenditure programmes focusing on technology installations, investment in infrastructure and equipment, public green procurement, etcetera.

The Methodologies and MRV systems are to be developed in a bottom-up process for each pilot, whereby only high-level "core parameters" will exist. TCAF's MRV approach must be aligned (accounting methodology, computer systems, among others) with host countries' national MRV systems. On this basis, TCAF can make a valuable contribution to building MRV capacities on the national level. Sectoral-level MRV can build on existing MRV methodologies developed under the CDM and JI, where appropriate and relevant.[42]

INTENDED FORM OF COOPERATION

While TCAF's aim is to purchase VERs that would be recognised under Article 6, its intended form of cooperation is yet to be defined and could potentially fall under either Article 6.2 or 6.4.[43] Nevertheless, cooperation under Article 6.2 seems more likely given the programme timeline,

[38] See, for instance, the Article 6.2 Capacity Note available at *https://www.tcafwb.org/sites/default/files/2023-09/5_Article%206.2%20Capacity%20Note%20Final.June15.pdf*
[39] TCAF pre-PIN template 2021. Available here: *https://www.tcafwb.org/programmes*
[40] TCAF (2023). Core parameters for TCAF operations. Available here: *https://www.tcafwb.org/sites/default/files/2023-03/TCAF_Core%20parameters_Updated%20Dec%202022.pdf*
[41] TCAF (2021). Supporting transformative mitigation action in developing countries through results-based payments for verified emission reductions. Available at: *https://www.tcafwb.org/sites/default/files/2021-12/TCAF%20Guidebook.pdf*
[42] Ibid.
[43] Transformative Carbon Asset Facility (TCAF). Core Parameters for TCAF operations. Available at *https://www.tcafwb.org/sites/default/files/2023-03/TCAF_Core%20parameters_Updated%20Dec%202022.pdf*

the developments under the UNFCCC negotiations for both mechanisms, as well as the current TCAF publications.

TRANSACTIONAL SET-UP

TCAF will test various methods to transfer mitigation outcomes between parties and provide stringent accounting and transparency to ensure the environmental integrity of the assets. The aim is to set parameters for each individual operation, including: (i) the length of the crediting period (i.e., five to seven years), (ii) the share of emission reductions achieved to be purchased by TCAF (crediting threshold), and pricing. The share of emission reductions purchased by TCAF varies and is specific to each operation. Overall, TCAF operations aim to purchase volumes over the full crediting period for five million tCO_2e.[44]

RELATIONSHIP WITH NDCs

TCAF will be linked to the host country's NDC as well as related policies and priorities. This ensures that the TCAF is contributing to the achievement of the mitigation goals and increasing NDC ambition. However, each of the two payment types relates to the NDC and national accounting differently (see table above).

TCAF adheres to 8 main criteria for its portfolio selection, including: [45]

1. coherence with national mitigation aims, by being consistent with or derived from the country's NDC and aligned with domestic policies and priorities
2. support increased domestic ambition
3. programmes that achieve a lasting impact, which can become self-sustaining after the Facility's support ends
4. programmes have demonstrable sustainable development co-benefits and maintain environmental and social safeguard standards
5. high level of environmental integrity of emissions reductions, consistently with the evolving framework and principles of UNFCCC rules at the time of implementation or MOPA signature
6. avoidance of distortions to the sector's international competitiveness and adverse incentives on the sector's GHG emission
7. use of a robust baseline for the programme; and
8. readiness for implementation, preferably with the generation of emission reductions beginning by 2020.

For each activity supported by TCAF the respective BAU emission trajectory will be compared with the unconditional target of a country's NDC emission trajectory. Whenever the target emission trajectory is below the BAU, the target emission trajectory will be the baseline, otherwise the BAU emission trajectory will be used. The diversity of NDCs of TCAF host countries means it requires a flexible approach and tailored for each TCAF operation. TCAF recognises the importance of avoiding double counting, nevertheless the programme does not have an established process to fully tackle this issue yet.

[44] World Bank. Core parameters for TCAF operations. December 2022: *https://www.tcafwb.org/sites/default/files/2023-03/TCAF_Core%20parameters_Updated%20Dec%202022.pdf*
[45] Ibid.

ACTIVITIES

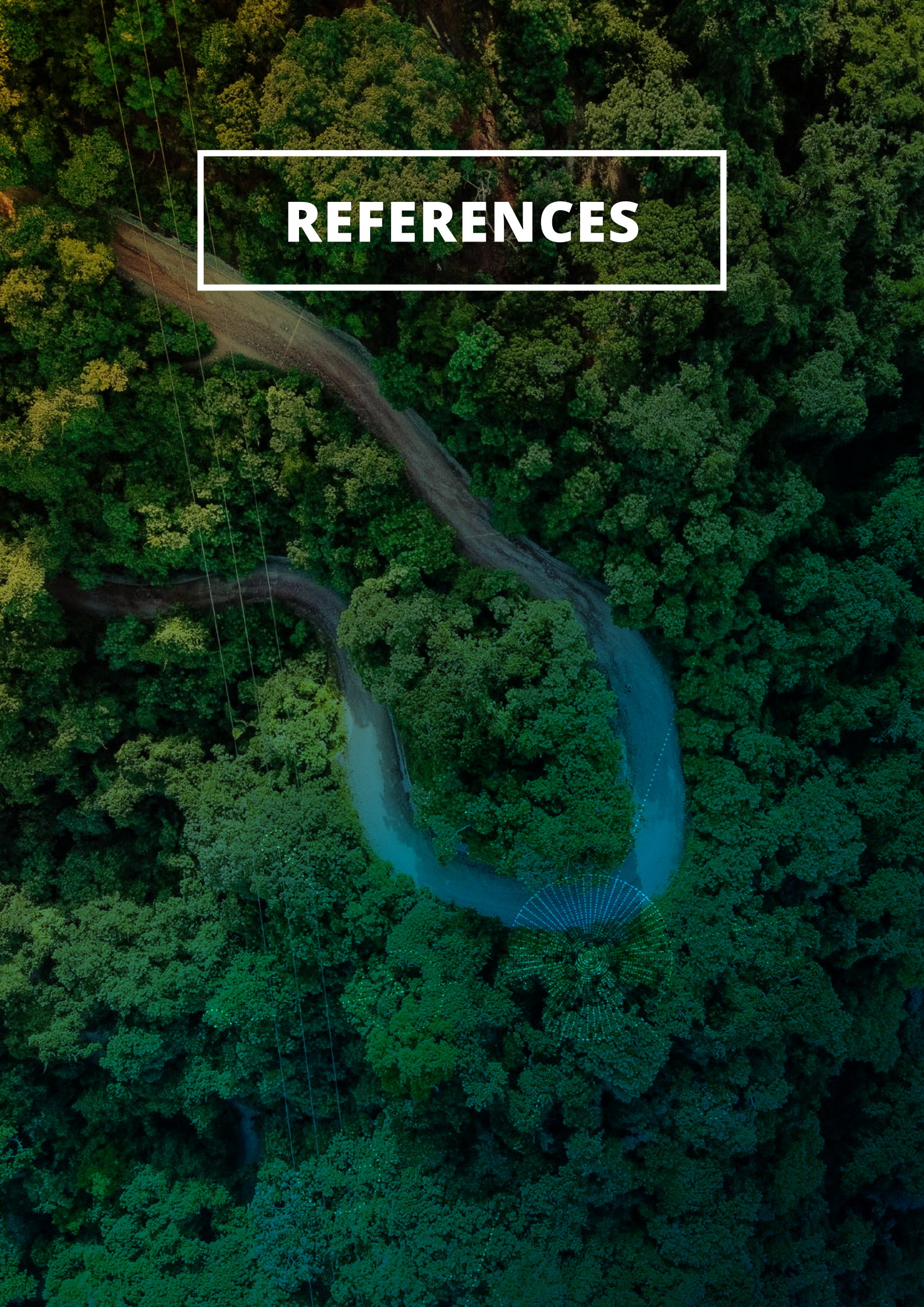
The Innovative Carbon Resource Application for Energy Transition Project for Uzbekistan (iCRAFT) in Uzbekistan was announced in June 2023. Through a USD 46.25 million grant, iCRAFT aims to create incentives for energy subsidy reforms that will result in lower energy consumption and GHG emissions. Until 2028, iCRAFT will disburse grant funds annually to reward energy subsidy reforms that achieve specific emissions reductions. Projections suggest that Uzbekistan could reduce around 60 million tCO_2e over the life cycle of iCRAFT, of which the project will make payment for approximately 2 – 2.5 million tCO_2e. Uzbekistan will be able to sell the remaining emissions reductions in international carbon markets using the systems and processes developed and tested under the project.

ANNEX I

ARTICLE 6.4 DNAS

ANALYSED COUNTRIES THAT HAVE NOMINATED AN ARTICLE 6.4 DNA (OCTOBER 2023)

Country	CDM DNA	Article 6.4 DNA
Bangladesh	Department of Environment	Ministry of Environment, Forest, and Climate Change
Brazil	Ministry of Science, Technology, and Innovation	Ministry of Environment and Climate Change
China	Ministry of Ecology and Environment	Ministry of Ecology and Environment
Cambodia	Ministry of Environment	Ministry of Environment
Colombia	Ministry of Environment and Sustainable Development	Ministry of Environment and Sustainable Development
Costa Rica	Ministerio del Ambiente y Energia (MINAE) Dirección de Cambio Climático	Forestry Financing Fund (FONAFIFO), Ministry of Environment and Energy
Cote d'Ivoire	National Environment Agency (ANDE)	National Environment Agency (ANDE)
Ethiopia	Ministry of Environment, Forestry and Climate Change	Ministry of Planning and Development
Fiji	Ministry of Finance	Climate Change and International Cooperation Division (CCICD), Ministry of Economy
Ghana	MInistry of Environment Science Technology and Innovation	Environmental Protection Agency
India	Ministry of Environment and Forest and Climate Change	Nationally Designated Authority for the Implementation of Article 6 of Paris Agreement (NDAIAPA)
Malawi	Environmental Affairs Department	Ministry of Natural Resources and Climate Change
Morocco	Secrétariat d'Etat chargé de l'Eau et de l'Environnement	General Secretariat, Ministry of Energy Transition and Sustainable Development
Namibia	Ministry of Environment, Forestry and Tourism	Ministry of Environment, Forestry and Tourism
Pakistan	Ministry of Climate Change	Ministry of Climate Change
Peru	Ministerio del Ambiente	Ministerio del Ambiente
Rwanda	Rwanda Environment Management Authority	Rwanda Environment Management Authority
Saudi Arabia	National Committee for Clean Development Mechanism	Designated National Authority (DNA)
Senegal	Direction De L 'E'nvironnement	Ministere De L 'Environnement Du Developpement Durable Et De La Transition Ecologique, Direction De L 'E'nvironnement Et Des Establissements Classes
Uganda	Ministry of Water and Environment	Ministry of Water and Environment
Vanuatu	Ministry for Climate Change, Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management	Ministry of Climate Change Adaptation, Meteorology and Geo-hazards
Zambia	Climate Change and Natural Resources Management Department Ministry of Lands and Natural Resources	Ministry of Green Economy and Environment
Zimbabwe	Climate Change Management Department, Ministry of Environment, Climate, Tourism and Hospitality Industry	Climate Change Management Department, Ministry of Environment, Climate, Tourism and Hospitality Industry



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